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**Perceptions of  
Tertiary Education Service Quality**  
An Investigation into  
Providing Quality Service Encounters for  
International Students

A thesis presented in partial fulfilment  
of the requirements for the  
**Masters of Quality Systems**  
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## **Table of contents (high level)**

1. INTRODUCTION .....	1
2. LITERATURE REVIEW.....	5
3. RESEARCH METHODOLOGY .....	30
4. RESULTS .....	48
5. DISCUSSION .....	60
6. CONCLUSION .....	74
7. REFERENCES.....	78
8. GLOSSARY .....	87
9. APPENDICES.....	88

## **Table of contents (detail)**

1. INTRODUCTION .....	1
2. LITERATURE REVIEW.....	5
2.1. Introduction .....	5
2.2. Neoliberalism and Tertiary Education .....	5
2.2.1. The evolution of neoliberalism.....	5
2.2.2. Application of neoliberalism to the Tertiary Education Sector .....	6
2.2.3. Increased competition and export education .....	7
2.3. Quality Management and Tertiary Education .....	8
2.3.1. The evolution of Quality Management .....	8
2.3.2. Quality Service Encounters.....	10
2.3.3. Application of Quality Management Techniques to the Tertiary Education Sector..	10
2.3.4. Quality Management Techniques and the New Zealand Tertiary Education Sector	12
2.3.5. Quality improvement in Tertiary Education .....	12
2.4. Service Quality for International Students becomes a priority .....	15
2.5. Quality service encounters- all students .....	17
2.5.1. Studies on perceptions of satisfaction and service quality in tertiary education .....	17
2.5.2. Studies on student success in tertiary education.....	19
2.6. Unique needs of international students .....	21
2.6.1. International research on quality service encounters and international students...22	
2.6.2. NZ research on Quality Service Encounters and international students.....	23

2.7.	Summary of the most important aspects of the literature .....	27
2.8.	Research questions .....	27
3.	RESEARCH METHODOLOGY .....	30
3.1.	Introduction .....	30
3.2.	Detailed description of research questions and hypotheses.....	30
3.3.	Research methodology .....	32
3.4.	Research method.....	34
3.4.1.	Choice of research method .....	35
3.4.2.	Ethical considerations.....	36
3.4.3.	Use of incentives .....	37
3.5.	Questionnaire Design .....	38
3.5.1.	Source of questions .....	38
3.5.2.	Time commitment .....	39
3.5.3.	Scale construction .....	40
3.5.4.	Additional questions.....	42
3.5.5.	Negatively worded questions .....	42
3.5.6.	Draft Questionnaire.....	43
3.6.	Focus group.....	43
3.7.	Conduct of questionnaire .....	44
3.7.1.	Questionnaire finalised .....	44
3.7.2.	Questionnaire participants identified .....	44
3.7.3.	Questionnaire undertaken by participants .....	45
3.7.4.	Processing and inputting of data.....	46
4.	RESULTS .....	48
4.1.	Introduction .....	48
4.1.1.	Overview of population.....	48
4.1.2.	Statistical significance.....	49
4.2.	Internal consistency of scales .....	49
4.2.1.	PLEQ scale.....	49
4.2.2.	PAI scale.....	50
4.2.3.	Reverse coding and internal consistency .....	51
4.3.	Results by hypotheses in order.....	52
4.3.1.	Hypothesis 1 .....	52
4.3.2.	Hypothesis 2 .....	53
4.3.3.	Hypothesis 3 .....	54

4.3.4.	Hypothesis 4 .....	54
4.3.5.	Hypothesis 5 .....	55
4.3.6.	Hypothesis 6 .....	55
4.4.	Further data exploration.....	56
4.4.1.	Subpopulations and PLEQ scores .....	56
4.4.2.	Subpopulations and PAI scores .....	57
4.4.3.	Any other comments .....	58
5.	DISCUSSION .....	60
5.1.	Introduction .....	60
5.2.	Internal consistency.....	62
5.3.	Objective 1.....	62
5.4.	Objective 2.....	63
5.5.	The value of unsupported hypotheses .....	64
5.6.	Objective 3.....	65
5.7.	Further pattern exploration.....	66
5.7.1.	PLEQ results.....	66
5.7.2.	PAI results.....	67
5.8.	General comment results .....	67
5.9.	Data gathering .....	69
5.10.	Limitations of the study .....	69
5.11.	Future studies .....	72
6.	CONCLUSION .....	74
6.1.	What worked .....	74
6.2.	What didn't work.....	75
6.3.	And as for Neoliberalism.....	76
7.	REFERENCES.....	78
8.	GLOSSARY .....	87
9.	APPENDICES.....	88
9.1.	Final questionnaire .....	88
9.2.	Questionnaire responses .....	93
9.3.	Supplementary statistical analysis.....	96
9.3.1.	ANOVA & Post Hoc test results from subsection 4.4.2 .....	96
9.3.2.	Domestic students PAI by length of study from subsection 5.6.....	98

## Table of contents (figures)

Figure 1. <i>Evolution of Quality Management</i> .....	8
Figure 2. <i>NZ Tertiary Institution with major customer inflows and outflows</i> .....	14
Figure 3. <i>Literature review schematic 1</i> .....	16
Figure 4. <i>Literature review schematic 2</i> .....	26
Figure 5. <i>Alignment of aim, objectives, research questions and hypotheses</i> .....	29
Figure 6. <i>Detail of research method</i> .....	35
Figure 7. <i>Relationship of research variables to scales</i> .....	41
Figure 8. <i>Scatterplot of PLEQ to student’s overall perception of the quality of their learning experience</i> .....	50
Figure 9. <i>Scatterplot of hours studied outside of timetabled course time correlated with PAI scores</i> .....	51
Figure 10. <i>Scatterplot of PLEQ to PAI correlation</i> .....	53
Figure 11. <i>Overview of results by hypotheses, research questions, objectives and aim</i> .....	61

## Table of contents (tables)

Table 1. <i>Examples of studies using SERVPERF, SERVQUAL and HEdPERF</i> .....	18
Table 2. <i>Simplified definitions of terms related to student engagement</i> .....	21
Table 3. <i>Dominant research paradigms</i> .....	32
Table 4. <i>Final questionnaire question breakdown by type of question</i> .....	44
Table 5. <i>Graduate and postgraduate programmes at the Institute under study</i> .....	45
Table 6. <i>PAI scale and Cronbach’s Alpha coefficient scores</i> .....	52
Table 7. <i>PLEQ scores of international students and domestic students</i> .....	53
Table 8. <i>PAI scores of International students and domestic students</i> .....	54
Table 9. <i>Academic skills of international and domestic students</i> .....	55
Table 10. <i>International students PLEQ scores one versus two or more semesters</i> .....	55
Table 11. <i>International students’ PAI scores one versus two or more semesters</i> .....	56
Table 12. <i>PLEQ scores full-time versus part-time students</i> .....	57
Table 13. <i>PAI scores full-time versus part-time students</i> .....	58
Table 14. <i>Other comments regarding learning experience by international/domestic status</i> .....	59
Table 15. <i>Examples of other comments regarding learning experience</i> .....	59
Table 16. <i>ANOVA of PAI average value</i> .....	96
Table 17. <i>Test of Homogeneity of Variances of PAI Average value</i> .....	96
Table 18. <i>Multiple Comparisons of PAI Average value</i> .....	96
Table 19. <i>PAI Average value, Tukey HSD</i> .....	97
Table 20. <i>Domestic students PAI scores one versus two or more semesters</i> .....	98

## ABSTRACT

International students have become increasingly important to the financial sustainability of tertiary education institutions in New Zealand. Recruiting and retaining international students in a competitive international marketplace has resulted in individual institutions catering to students as if they are customers. This requires institutions to understand their international students so they can best satisfy their needs.

Published research on student satisfaction and success has identified academic and social integration with a student's institution of study are crucial antecedents to student satisfaction and success. This integration has been identified as being especially difficult for international students as they must acculturate to a new cultural and academic environment. New Zealand research has identified that the quality of the learning experience is the major contributor to overall international student satisfaction. However, there is a paucity of research on the New Zealand international student experience, and the extent to which the New Zealand experience reflects the international experience is unclear.

The research described here is an attempt to clarify to what extent the international student experience in New Zealand differs from the experience of local domestic students and reflects the experience of international students in other countries. Specifically, the research investigated the relationship between international students' perception of learning experience quality and academic integration within one New Zealand Polytechnic. A questionnaire was developed based on two scales to measure the two latent variables of perception of learning experience quality and perception of academic integration. The questionnaire was undertaken by both international and domestic students at two campuses of the institution under study.

The results gained from the questionnaire established that perception of academic integration for international students increased over time, however perception of learning experience quality did not. There was no significant difference in the results between international and domestic students. There was some corroboration of international research, but there were also some significant differences. These results provide further impetus for tertiary institutions in New Zealand to better understand their international students if they are to succeed in the international student marketplace.

## **1. INTRODUCTION**

### **Background**

The rise of neoliberalism in the Western world has profoundly changed tertiary education provision in New Zealand. An increased emphasis on economic sustainability, along with greater competition between tertiary institutions has focused tertiary institutions on the enormous growth potential of international students. Interwoven with this neoliberalist imperative, quality management tools, techniques and philosophies have also brought change to the tertiary education sector. The embedding of quality assurance and reporting has been coupled with a focus on providing quality customer service, especially to students.

The increased importance of the student as a customer in tertiary education has led to a plethora of research on quality service encounters in tertiary education. This research has identified that integration into the social and academic arenas of tertiary education is a prime determinant of the success of the student (e.g. Tinto, 1993). The ability of students to integrate into an institution is particularly difficult for international students, alongside other minority students, for various reasons including the disjunction between their cultural background and the culture of the society in which the learning takes place (Bai, 2016). Meanwhile research in New Zealand has shown that it is the learning experience that is the prime determinant of international student satisfaction (Generosa, Molano, Stokes & Schulze, 2013) and that there is a need for in-depth institution-specific research to determine how each institution is best able to provide quality service encounters (Duque, 2014).

### **Aims and objectives of the research**

The aim of the research described here is to contribute to the store of knowledge regarding how tertiary institutions can best provide quality service encounters for international students. The case will be made, that given the current neoliberal political climate that tertiary institutions inhabit, financial sustainability has become a core focus for institutions and this has resulted in a targeting of the competitive international student market to remain financially viable. To be successful in this marketplace institutions need to determine how best to provide quality service to these non-traditional students.

The literature on providing students in general with quality service encounters, and especially with engaging educational experiences, is voluminous, and a consensus is beginning to emerge as to how to do this. However research on international students particularly is not as common and so the 'how to' for them is less clear, especially in regard to the New Zealand context. Also unclear is

the link between educational engagement and students' perception of learning experience quality. As such, the objectives of the research are to contribute to the ongoing exploration of whether:

- Students' perception of learning experience quality correlates with their perception of academic integration with their institution of study.
- International students' perception of learning experience quality and academic integration are different than that of domestic students.
- International students' perception of learning experience quality and academic integration increase with their time spent studying.

### **Research Questions**

The following research questions are based on the objectives of the research and the outcomes of the literature review:

1. Does the perception of learning experience quality correlate with academic integration?
2. Do international students' have unique needs that are different than that of domestic students?
  - a. Do international students in New Zealand perceive the quality of their learning experience as highly as domestic students?
  - b. Are international students in New Zealand as academically integrated as domestic students?
3. Do international students' adapt to the NZ system over time?
  - a. Does international students' perception of learning experience quality increase with time spent studying?
  - b. Does international students' academic integration increase with time spent studying?

### **Scope and boundaries of the research**

The research investigated the perceptions of international students regarding the quality of their learning experiences at their institution of study in New Zealand. Domestic students' perceptions were also investigated to provide a comparison with which to understand international students' unique learning experience quality requirements. A questionnaire of graduate and postgraduate students at one tertiary institution was undertaken to generate data that were used to test hypotheses that had been synthesised from the literature. In addition, further pattern exploration was undertaken to provide contextual information regarding students' perceptions.

### The importance of the research and potential contribution to knowledge

The research is of substantial importance, considering the national and global significance of international students to tertiary education. The research contributes to the theory of tertiary education by:

- providing evidence against the contention that international students as a group have unique learning experience needs that differ to domestic students in tertiary education
- providing evidence for the contention that international students from particular countries have unique learning experience needs that differ to other students

Practically, the results can be utilised by tertiary institutions to inform managerial decision-making regarding allocation of scarce resources. The take-home message for management is that rather than considering international students as a specific sector to serve in a particular way, that this group contains multitudes, and needs to be assessed and addressed at a subgroup level.

### Research method overview

The study used a mixed methods research approach to investigate the relationship between two constructs - perception of learning experience quality (PLEQ) and perception of academic integration (PAI). The research questions identified above were transformed into hypotheses and a questionnaire was developed to measure the two constructs which was based on two widely used questionnaires - HEdPERF and NSSE. The final questionnaire was distributed to graduate and postgraduate students across two campuses at one tertiary education institution in New Zealand. Qualitative data from the questionnaire was coded and themed, whilst the quantitative data was subject to univariate and bivariate analysis using SPSS software to test the hypotheses. The results of the hypothesis testing and further data analysis were then used to determine the answers to the research questions.

### Limitations of the study

1. The hypotheses were developed to test perceptions of international students over time and in comparison to domestic students, as such the results masked differences in perception that existed between international students' nationalities.
2. This study used a scale that measures perceptions only, therefore limiting objectivity.
3. This study explored correlations and comparisons only, therefore causal connections were not able to be established.
4. This study provides data from one point in time only and does not track students over time, it therefore presents a single snapshot of students' perceptions when a series of snapshots to identify perceptions over time is preferable.

5. This was a case study carried out at one institution only, so the population under study may be atypical when compared to the wider tertiary education sector.

#### **Flow and contents of remaining sections**

This introductory section outlines the research questions, their scope, boundaries and limitations and the methods that were used to undertake the research. The next section presents a literature review that is divided into two parts: the first part identifies how previous events and research have led to the prioritising of international students and service quality in tertiary education; while the second part outlines the international and national research into providing quality service encounters for tertiary students. These two parts are summarised in two literature review schematics that can be accessed through the table of contents (tables).

The third section outlines the research methodology that informs the research method and details the research method itself. This is followed by a section which presents the research results, while the following discussion section considers the relationship of the results to the objectives of the research. The concluding section relates the results back to the original aim of the research and considers the lasting contributions of the research.

## **2. LITERATURE REVIEW**

### **2.1. Introduction**

This literature review summarises how international students have become crucial to tertiary education globally and nationally, and then summarises published research on how best to provide service quality for these students.

Firstly, the rise of neoliberalism as a dominant economic theme of Western societies over the last few decades is outlined. Then the effect of neoliberalism on tertiary education globally and especially in New Zealand is summarised, including the limited ability of New Zealand tertiary institutions to succeed financially without enrolling international students. Then the parallel rise of quality management tools, techniques and philosophies is described, including their application to the education sector. The two interwoven themes of neoliberalism and quality management are then brought together in a conceptual model which identifies the focus of this research, being the prioritisation of quality service encounters for international students (see figure 3).

Secondly, the provision of quality service encounters for all students is considered in the international context by initially focusing on studies of student's perception of satisfaction and service quality in tertiary education and then focusing on studies of student success in tertiary education, including in New Zealand. After the consideration of student success factors that apply to all students, the unique needs of international students are considered, as well as those factors that apply especially to international students in the New Zealand tertiary system. This part of the literature review is summarised in figure 4.

Finally, a summary of the most important aspects of the literature is provided, along with a summary of the research gaps which result in a series of research questions.

### **2.2. Neoliberalism and Tertiary Education**

Since the 1980s neoliberal policies have been progressively introduced into tertiary education systems throughout the world, including in New Zealand, and this has resulted in the growth of a competitive market in export education.

#### **2.2.1. The evolution of neoliberalism**

The evolution of neoliberalism in the Western world is generally traced back to the 1980s (Swartz, 2013) and remains deeply embedded in most countries (Kelsey, 2015). Neoliberalism can be summarised as the view that the free market is seen as the best possible way to distribute goods

and services and that the market should be intensified and expanded to all aspects of society (Allais, 2014).

New Zealand has been at the forefront of the rise of neoliberalism from the 1980s, with a 1996 Economist poll of 10 leading economists ranking the New Zealand economy as the freest of 20 countries considered (Swarts, 2013). Along with a 'firesale' of New Zealand's public sector assets from the mid-1980's, New Zealand has so entrenched neoliberalism in its trade agreements, public-private partnerships and legislation that we have entered an era of 'embedded neoliberalism' that will be difficult for future governments to supersede (Kelsey, 2015).

### **2.2.2. Application of neoliberalism to the Tertiary Education Sector**

Within the tertiary education sector, neoliberalism has resulted in 'massification and vocationalisation' of tertiary education, greater numbers of students but decreased funding per student, along with greater competition between universities and between universities and other higher education providers (Rowlands, 2012). Not only are tertiary institutions within nations competing against one another, but they are also competing with institutions from around the world, as education has come to be bought and sold across borders, affecting the historical academic, cultural and social purposes of education (Knight, 2013). Indeed many of education's historical progressive goals -such as fostering critical thinking, political literacy, self-esteem, self-actualisation, creativity and developing caring and tolerant citizens-have been smothered by the economic imperatives of industry and global competitiveness (Houston, 2007). The new overarching goal of tertiary education has instead become to serve knowledge capitalism through training participants for the workforce and producing quantitative research to prove 'what works' (Zepke, 2017).

New Zealand tertiary institutions have been educating students since 1869 (Ministry for Culture and Heritage, N.D.) but the profit imperative and the current user pays system, along with easy credit for students has only featured within the last 30 years (Kelsey, 2015). Nowadays the general community in New Zealand, along with teachers, students and administrators accept neoliberal policies as 'common sense' and student choice is paramount, based on a range of increasingly public institutional performance data such as price, retention and completion rates, and employment outcomes (Zepke, 2017). The new 'investment approach' is all about a return on investment for any money the government allocates to tertiary education and has resulted in funding for the arts and humanities being reduced in favour of the more economically relevant fields of Sciences, Technology, Engineering and Medicine (the STEM subjects) (Shore & Wright 2016).

### **2.2.3. Increased competition and export education**

The commercialisation of education has also led many countries into the international student market in the search for revenue (Knight, 2013). As countries seek to generate revenue from international students, especially when other financial conditions are held constant, a competitive market in international students has emerged (Cantwell, 2015). New Zealand has been so successful in this market that it manages to charge international students the highest fees (tuition fees charged to foreign students at bachelors or equivalent level 2013/14) amongst the major exporters of international education, whilst also receiving from the international students the highest proportion of revenue vis a vis the total Government expenditure on tertiary institutions (estimated revenues from foreign students at bachelors or masters level as a share of total expenditure on tertiary institutions 2013/14) (OECD, 2017).

The government body regulating funding for tertiary institutions in New Zealand is the Tertiary Education Commission (TEC). All of the tertiary institutions in New Zealand may, if they fulfil certain conditions, seek government funding for enrolling domestic students, however the number of domestic students each institution can receive government funding for has been capped since 2006 (New Zealand Productivity Commission, 2016). So although there is strong competition among tertiary institutions for domestic students, tertiary institutions are not given the capacity to achieve strong cash flows on the basis of government funds from domestic student enrolment. Hence, the tertiary education industry in New Zealand, encouraged by TEC through its Crown agency for international education- Education New Zealand- has looked to the international student market as a source of additional funding. TEC's Tertiary Education Strategy 2014-2019 identifies the goal of doubling the annual value of New Zealand's international education services by the year 2025 (Ministry of Education and Ministry of Business, Innovation and Employment, 2014).

The slice of the international student market that is receiving special attention from tertiary institutions and Education New Zealand are postgraduate students, with Education New Zealand having an objective to double the number of international postgraduate students in New Zealand from 10,000 to 20,000 (Education New Zealand, 2016). Between 2015 and 2016 the number of international full time equivalent students enrolled in graduate certificates or diplomas increased by 17% and those in postgraduate programmes increased by 9% compared to a total international student growth rate of 3% (Education New Zealand, 2017).

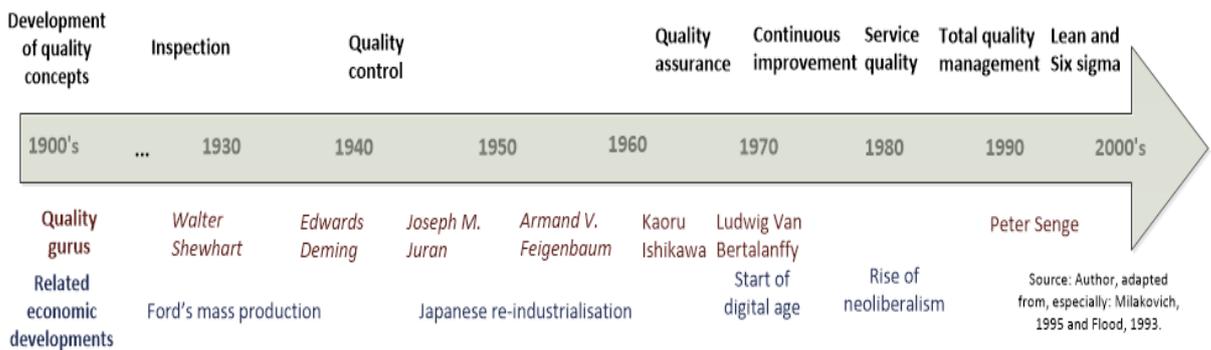
The increase for graduate and postgraduate international students particularly is because they are more lucrative and more prestigious for the institution than lower level students (Shekarchizadeh, Rasli & Hon-Tat, 2011) as well as being more likely to stay in New Zealand following graduation and they also earn more money when they do stay (Fabling, 2016). As such, fee-paying graduate and post graduate international students are sought eagerly by institutions in New Zealand that are seeking to remain financially sustainable.

### 2.3. Quality Management and Tertiary Education

Coincidental with the introduction of neoliberal policies, quality management techniques have been progressively introduced into tertiary education systems throughout the world, including in New Zealand. This has resulted in a plethora of service quality initiatives as tertiary institutions tailor their education to match customer expectations.

#### 2.3.1. The evolution of Quality Management

A synchronous wave of change alongside neoliberalism that has swept over the New Zealand economy in general, along with the education sector from the 1980's, are the tools, techniques and philosophies of quality management. These tools, techniques and philosophies were transferred from the production lines of the manufacturing sector and spread to the service sector as the service industries rose in economic prominence (Beckford, 2010). The ongoing development of quality concepts is summarised in Figure 1 below.



**Figure 1. Evolution of Quality Management**

The beginnings of quality management lie in the increasing emphasis on inspection to improve production failure rates in manufacturing facilities in Europe and USA in the 1800's and early 1900's (Weckenmann, Akkasoglu & Werner, 2015). The modern iteration can be more precisely traced back to Walter Shewhart who applied statistical analysis and methods to control quality in American industry in the 1930's at a time when Henry Ford's car manufacturing plants were

ushering in the new era of mass production. W. Edwards Deming built on the work of Walter Shewhart and then, along with Joseph M. Juran and Armand V. Feigenbaum, took the developing paradigms, tools and techniques to Japan as it began to re-industrialise following the Second World War (Milakovich, 1995).

Japan was extremely successful in integrating these methods and concepts into their production processes and their manufacturing began to set a new benchmark for the rest of world to follow. Kaoru Ishikawa particularly was instrumental in the Japanese quality movement and is recognised, along with Deming and Juran as 'intellectual godfathers' of the Japanese economic miracle following the country's re-industrialisation after the Second World War (Milakovich, 1995).

As the focus of this emerging field of quality management gradually widened, it began to address the quality of the entire range of processes in manufacturing organisations, and what had started out as inspection and statistical process control with Walter Shewhart in the 1930s evolved through an emphasis on quality control in the 1950s and into quality assurance (Weckenmann, et al., 2015). It was then that the Japanese, including Ishikawa, began to apply quality to management, rather than just production, and to change the emphasis from improvements in the production process to improvements in the quality of products (Flood, 1993).

In a parallel but intersecting development, systems thinking was gaining traction in academic fields and with Ludwig Van Bertalanffy's book on General Systems Theory published in 1968, the concept of open, purposive, adaptive, and goal oriented systems reached a larger audience (Midgley, 2000). From a systems perspective, an organisation's quality mission can be seen to be "... caring for the organization's fitness for purpose; specifically, caring for fitness in generating and delivering the expected values." (Conti, 2010, p. 358). As systems thinking was incorporated into the quality field, by the early 1980s the concept of Total Quality Management had coalesced and involved:

"... continuous improvement, involvement of all operations at all levels of an organisation, undertaking performance measurement, focus on leadership, teamwork and employee participation and motivation, along with a whole system perspective." (Flood, 1993, p. 10).

This whole system perspective was elaborated further by other quality thinkers, most notably Peter Senge in his book *The Fifth Discipline* which utilised systems thinking to bring about the concept of a 'learning organisation'- business organisations that excel because they are comprised of staff who learn continuously and faster than their competitors (Senge, 2006).

### **2.3.2. Quality Service Encounters**

As the development of Total Quality Management was taking place with its holistic focus, the service sector was becoming increasingly important to national and global economies, becoming the dominant employer and generator of economic growth (Beckford, 2010). The service sector was adopting and customising quality management techniques from the manufacturing sector and the concept of service quality began to be differentiated from product quality (Chakrapani, 1998). This differentiation included two main factors: identifying what customers perceive as quality and identifying which business processes contribute to customer's perceptions of quality (Flood, 1993). Note that both of these factors are centred around the 'customers' perception of quality', and of crucial significance is that the customer's perception of quality generally occurs in an interaction between customer and provider during service delivery (Zeithaml, Parasuraman & Berry, 1990). Thus it is the nexus between the customer and the provider of the service -the service encounter- that is critical to customers' quality perception in the service industry and that what the service industry is seeking to provide for their customers is a 'quality service encounter'.

A further factor involved in investigating what makes up a quality service encounter is the relationship between a customers' perception of service quality and customer satisfaction. Service quality can be conceptualised as customers' judgement about a service, while satisfaction is more of a judgement about how the service emotionally affects the customer (Schneider & White, 2004). There is general agreement that perceived service quality is antecedent to customer satisfaction (for example Duque, 2014, Schneider & White, 2004 and Cronin & Taylor, 1992) and this has been corroborated in a number of tertiary education studies (see for example: Sultan & Wong, 2013, Lazibat, Baković & Dužević, 2014 and Subrahmanyam & Raja Shekhar 2016), but not all (see for example: Agbor, 2011).

### **2.3.3. Application of Quality Management Techniques to the Tertiary Education Sector**

Quality management principles have been applied to the education sector from the mid-1900s but it was in the late 1980s and 1990s that there was an upswing in application of quality management to tertiary education (Karathanos, 1999, and Shore & Wright, 2016). The increasing application of the neoliberalist agenda to education ushered in business processes and techniques that likely propelled this recent focus on quality management in tertiary education (Quinn, Lemay, Larsen & Johnson, 2009 and Houston, 2010). This new era of managerialism included quality management's core tenets of customer satisfaction, reduction of variation and measurement of quality as well as the political agenda that lay behind these tenets- enterprise, individualism, competition and the free market (Houston 2007). It also entrenched tertiary education in a global knowledge economy

consisting of an international market open to private providers, where the purpose of tertiary education is:

“...producing the knowledge, skills and graduates to generate the intellectual property and innovative products that would make their countries more globally competitive.” (Shore & Wright, 2016, p. 47).

Implementing a comprehensive Total Quality Management (TQM) system at a tertiary institution is a large and expensive undertaking and has many hurdles to overcome, not least the reluctance of academic staff to buy into the neoliberalist political agenda (Houston, 2007). A literature review of TQM initiatives in tertiary education (Quinn, et al. 2009) has shown that very few teaching and learning improvements have been shown as a result of TQM efforts – severely limiting TQM’s ability to have any significant impact upon higher education. However, what these TQM initiatives have achieved for tertiary education is the further entrenchment of a business framework and methodologies that have promoted managerial control and accountability to customers (Houston 2010).

Tertiary education is a unique setting in which to apply quality management interventions. The administrative and auxiliary service functions are very similar to the typical business world, but academic/ instructional settings which are the heart of tertiary education are atypical. As such, academic/ instructional settings have been the most difficult areas in tertiary education to implement quality management initiatives, whilst intervention in administrative and auxiliary service settings have been the most successful (Quinn, et al., 2009). Despite many successful quality interventions in the education sector, including the application of Lean and development of Baldrige education criteria for performance excellence framework, quality management initiatives in the education sector have lagged behind that of the wider business sector (Karathanos, 1999 and Balzer, Francis, Krehbiel & Shea, 2016).

Overall, from the 1990’s, organisational transformations that were the intended focus of the new quality management philosophy had begun to be moved to the background and specific quality tools and techniques were once again the focus of intervention (Conti, 2010). Quality management as applied to tertiary education evolved into two distinct categories: quality improvement and quality assurance (Rowlands, 2012). Quality improvement focuses on continual incremental and breakthrough change, whereas quality assurance focuses on the need for academic programmes to meet a common standard and conform to external requirements (Dew & Nearing, 2004).

### **2.3.4. Quality Management Techniques and the New Zealand Tertiary Education Sector**

New Zealand's education system has led the world with some TQM developments, especially quality assurance, as exemplified by the development of the New Zealand Qualifications Framework (NZQF) (Allais, 2014). Allais (2014) argues that the development of the NZQF was a direct outcome of the application of neoliberalist doctrine to the education sector in New Zealand and that the explicit aim of the framework was to create a market for delivering vocational education via 'industry-led' qualifications that were independent of educational providers and competency-based (however, this interpretation of the NZQF as a harbinger of neoliberalism is contested (see, for example, Blackmur, 2015)).

Whatever the motivations and precursors, TQM initiatives have become embedded in New Zealand's tertiary education system and there have been many initiatives, both institution-led and government-led, to promote accountability, performativity and standardisation of outcomes across New Zealand's tertiary education sector (Zepke, 2017, Paewai, 2011 and Houston, 2007). External agencies such as the New Zealand Qualifications Authority and the Academic Quality Agency for New Zealand Universities hold individual institutions throughout the country accountable to benchmarked standards as they aim to ensure New Zealand's tertiary education is recognised and accepted internationally (Kirkwood & Cameron, 2013). However this focus on assurance-standardisation and monitoring of quality- may have diverted attention from continuous improvement and enhancement initiatives, such as the work of Ako Aotearoa, and a refocusing to achieve quality improvement in New Zealand's tertiary education system is overdue (Houston, 2010).

### **2.3.5. Quality improvement in Tertiary Education**

Internationally, Deming had begun encouraging faculty and staff in higher education to study continuous improvement concepts in order to establish a methodology for improvement of academic programmes in the late 1980s (Dew & Nearing, 2004). Examples of continuous improvement tools successfully applied to tertiary education include peer review and self-evaluation, along with Quality Function Deployment (QFD) and SERVQUAL (an abbreviation of service quality) which are both tools for measuring the perceptions and needs of customers. But it is precisely the difficulty of identifying tertiary education's customer that is a major barrier to quality improvement efforts in the tertiary education sector (Quinn, et al., 2009).

Given that service quality has as its objective: meeting or exceeding customer expectations (Woodall, Hiller & Resnick, 2014), defining the customer is a crucial aspect of applying service quality principles in the tertiary education sector. Customers can be categorised as either internal

or external, and, without diminishing the importance of internal customers, it is the external customers that provide the revenue that enable the business/ organisation to survive in a competitive world (Schneider & White, 2004). Defining the external customer is especially problematic in tertiary education because of the vast array of external customers involved in tertiary education. Figure 2 below provides a simplified representation of a tertiary education organisation with some of the major external customer inflows and outflows. Major external customers and examples of what the tertiary institution provides to them include:

- Society to which the tertiary institution provides good citizens, knowledge creation, a sense of community and economic activity.
- The New Zealand Government to which tertiary institutions provide graduates to work within the government and the wider society, research and a source of funding through taxation.
- The educational system as a whole to which the tertiary institution provides knowledge that contributes to the development of academic disciplines and graduates to work within the wider educational system
- Private businesses to which the tertiary institution provides research and graduates that are able to perform the functions required of the workforce.
- Students to which the tertiary institution provides an opportunity to achieve personal transformation, knowledge, skills and qualifications with which to seek employment, an opportunity to migrate to New Zealand for international students, and a sense of community.



- remain as students (or not)
- get jobs (or not)
- become better citizens (or not)

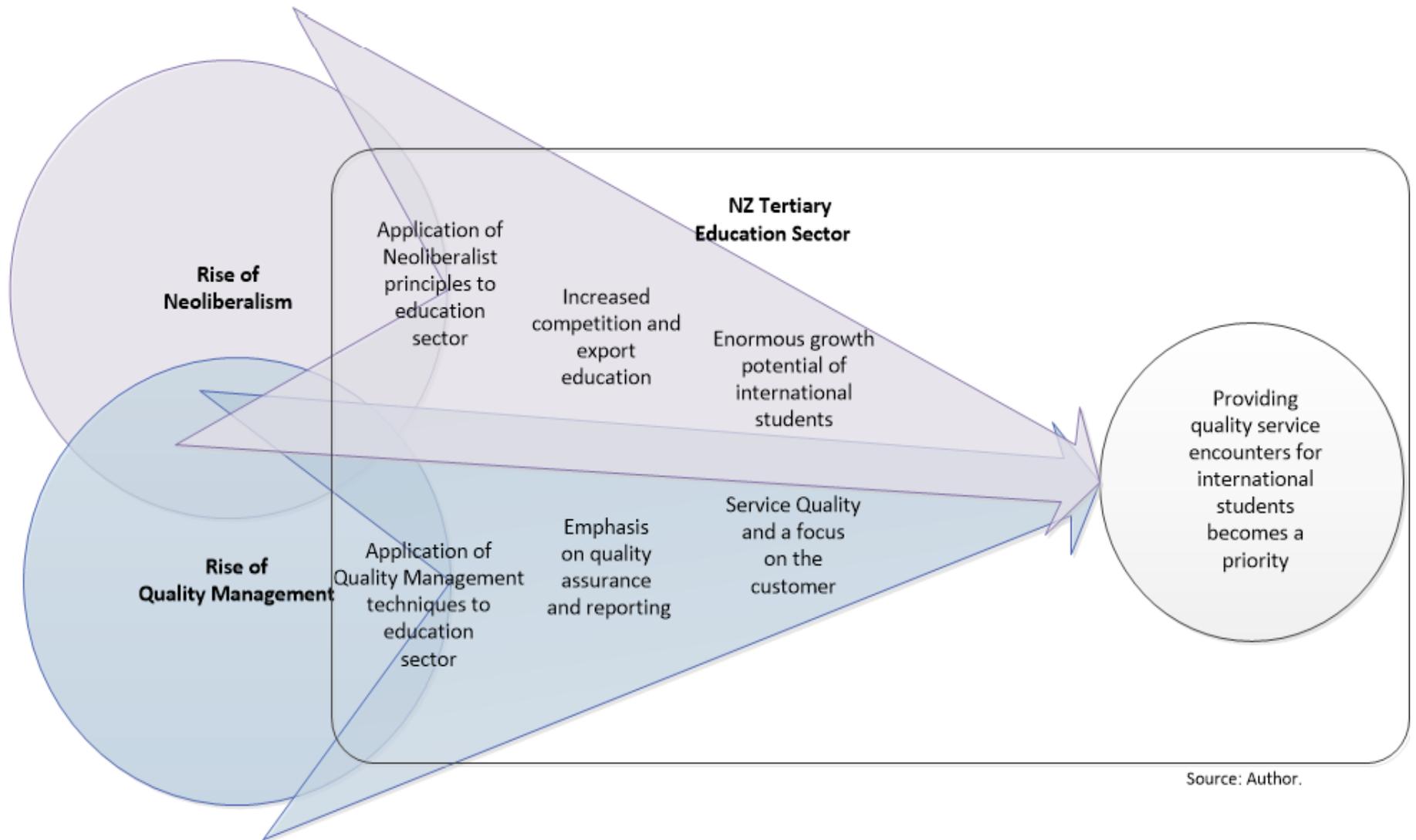
(Scottish Executive, 2005).

Following this logic, this research will proceed with the interpretation that it is students who are the primary customer of tertiary education. This is with acknowledgement that students are not the only customers, and that tertiary institutions provide multiple services to multiple customers.

#### **2.4. Service Quality for International Students becomes a priority**

The previous two subsections have described how the rise of neoliberalism and the application of neoliberalist principles to the education sector have led to increased competition and the notion of export education. Meanwhile, the rise of quality management and the application of its tools and techniques to the education sector have included the principles of service quality and a focus on the customer. The intersection of these dual waves of change has led to the current prioritisation of providing quality service encounters for international students as shown in figure 3 below.

Given that students are tertiary institution's primary customers, and given the increased focus on international students by tertiary institutions, providing service quality for international students has become a priority for tertiary institutions. To determine how best to provide service quality for international students, the research that has been published on providing successful service quality encounters for all students will be reviewed, followed by a review of the research on international students specifically.



Source: Author.

Figure 3. Literature review schematic 1

## **2.5. Quality service encounters- all students**

There are two distinct strands of research regarding quality service encounters in tertiary education that are relevant to this thesis. Both of these strands are discussed below and inform the research method. Firstly those studies that have explored students' perceptions of satisfaction and service quality with the institutions in which they are enrolled are summarised, and secondly an overview is provided of the research that has developed around what it takes for students to be successful in tertiary education.

### **2.5.1. Studies on perceptions of satisfaction and service quality in tertiary education**

The early service quality work of Zeithaml, Parasuraman and Berry described in their 'Delivering Quality Service' book (1990) has been utilised by many in the education sector as a theoretical basis on which to explore perceptions of service quality for individual institutions. Zeithaml, Parasuraman and Berry's explication of the SERVQUAL (service quality) survey tool and its subsequent iterations-SERVPERF (service performance) and HEdPERF (higher education performance measurement) have been central to this.

Zeithaml, Parasuraman and Berry's (1990) service quality model was built on the gap between customer's expectations of a service and their actual experience of a service. Following widespread criticism of the Gap model, a variation of SERVQUAL that measures service performance only was tested (Cronin, & Taylor, 1992). Labelled SERVPERF it measures the customer satisfaction of the service encounter only, and comparisons of the measure, including alongside SERVQUAL and a further technique (Evaluated Performance) have confirmed that SERVPERF is more reliable, has greater ability and less bias than SERVQUAL in tertiary education settings (Cronin, & Taylor, 1992 and Firdaus, 2005). Further use of SERVPERF confirmed that industry specific instruments would provide even better results than a generic service quality instrument, subsequently HEdPERF was developed to target higher education specifically (Firdaus, 2005). Since its development, HEdPERF has been utilised with good success in various tertiary education settings around the world (e.g. Mang'unyi and Govender, 2014, Lazibat, Baković and Dužević, 2014 and Brochado, 2009). However, as presented in Table 1 below, from the availability of studies utilising those tools to measure service quality in higher education, it appears that SERVQUAL is still the most popular off the shelf tool to measure service quality in educational settings.

It must be noted however that the efficacy of applying SERVQUAL and other such tools to measure customer satisfaction in the tertiary education industry has been critiqued on the basis that measuring the quality of tertiary institutions based on student satisfaction diverts attention away

from student development, advancement and growth (Dužević, 2015). This critique maintains that it is the actual engagement and learning that students' experience that are the most appropriate focus of tertiary education quality initiatives.

**Table 1. Examples of studies using SERVPERF, SERVQUAL and HEdPERF**

(Summary of student perception of service quality studies in tertiary education that have utilised either SERVPERF, SERVQUAL or HEdPERF (following development by Firdaus, 2005).)

Tool	Authors	Summary of findings
SERVQUAL SERVPERF HEdPERF	Brochado, 2009	Compared SERVQUAL, SERVPERF and HEdPERF in Portugal, found SERVPERF and HEdPERF performed best. Reliability and responsiveness are the most influential SQ dimensions.
HEdPERF	Randheer, 2015	Introduced aspects of Arab culture and tested modified HEdPERF and SERVPERF scales in Saudi Arabia. Modified HEdPERF deemed fit for the 'particular situation and time'.
HEdPERF	Lazibat, Baković & Dužević, 2014	Students' and teachers' perceptions of SQ emerge as significant determinants of student satisfaction.
HEdPERF	Mang'unyi & Govender, 2014	HEdPERF validity reconfirmed in Kenya. Positive and significant relationship between SQ and satisfaction.
HEdPERF	Sheeja, Krishnaraj, & Harindranath 2014	HEdPERF reliability and validity reconfirmed.
HEdPERF	Ntabathia, 2013	SQ positively related to student satisfaction in University in Kenya. Reputation and the nature of the programmes offered dimensions most important.
HEdPERF	Kimani, Kagira, & Kendi, 2011	Investigate perception of quality of service provided by public and private universities in Kenya. Students generally positive, with administrative dimension being most important.
SERVPERF	Kontic, 2014	Students in university in Serbia moderately positive, with assurance and reliability dimensions being most important.
SERVQUAL SERVPERF	Cronin & Taylor, 1992	Research indicates perceived SQ precedes perceived satisfaction, rather than perceived satisfaction preceding perceived SQ. SERVPERF performed better as measurement tool than SERVQUAL.
SERVQUAL	Dlačić, Arslanagić, Kadić-Maglajlić, Marković & Raspor, 2014	Perceived service quality is a significant predictor of both perceived value and intention to repurchase in tertiary institutes in Bosnia and Herzegovina and Croatia.
SERVQUAL	Zainuddin, Kahmis, Muhamad & Mamat, 2014	Perceptions were lower than expectations across all SQ dimensions in a Malaysian Research University.
SERVQUAL	Calvo-Porràl, Lévy-Mangin, & Novo-Corti, 2013	A comparison between a public and private institution in Spain found private performed better in perceived SQ. Tangibility and empathy dimensions are the most influential SQ dimensions.

Tool	Authors	Summary of findings
SERVQUAL	Agbor, 2011	Two of three industries in Sweden including a university had a significant correlation between service quality and customer satisfaction but not the third.
SERVQUAL	Shekarchizadeh, Rasli & Hon-Tat, 2011	International postgraduate students researched. Found SERVQUAL to be statistically reliable. Student perceptions of SQ perceived as negative compared to student expectations for all 5 SQ dimensions.
SERVQUAL	Gallifa & Batallé, 2010	Results of student's perception of quality were very campus specific for a large range of campuses in Spain.
SERVQUAL	Arambewela & Hall, 2009	The importance of SQ dimensions varied by nationality.
SERVQUAL	Khawaja, & Dempsey, 2008	International students had greater discrepancy between their expectations and perceptions of SQ than domestic students. (SERVQUAL along with other tools.)
SERVQUAL	Mai, 2005	Overseas students expressed significantly lower levels of satisfaction compared with domestic students in the UK and USA.
SERVQUAL	Sherry, Bhat, Beaver & Ling, 2004	At NZ's UNITEC in domestic students, international students and staff all had significantly different perceptions of the services being delivered.
SERVQUAL	Tan & Kek, 2004	Modified SERVQUAL scale utilised at 2 Singaporean universities. Results varied significantly between universities. Modified SERVQUAL scale successful.

N.B. SQ= Service Quality.

### 2.5.2. Studies on student success in tertiary education

Substantial research has focused on how to ensure students succeed, persist, graduate, complete, progress, engage, and integrate in, to and through tertiary education (e.g. Zepke & Leach, 2010, Zhao, Kuh & Carini 2005, and Tinto 1993,). In an overview of these terms, and the research that has investigated them Habley, Bloom and Robbins (2012) categorise studies into those that focus on the student and those that focus on the institution and note that there is an increasing acceptance that the crucial area of research is the nexus of these two. This research in general is from the education paradigm rather than the service quality paradigm, but its focus on the customer's interaction with the tertiary institution to produce quality outcomes, (i.e. student success, engagement, etcetera) accords with the service quality literature's identification of, and focus on, the service encounter as key. That is to say, quality service encounters in tertiary education are those that allow students to achieve successful tertiary education outcomes.

Other research in tertiary education has focused on student integration into tertiary institutions, both academically and socially. Tinto's Student Integration Model provides evidence that students who are not sufficiently integrated into one or other of the academic or social spheres in an

institution is likely to not be retained and to not succeed (e.g. Tinto 1993). A New Zealand based meta-analysis by Prebble et al. (2004) of 146 research reports that researched the effects that institutional support can have on student outcomes determined that the bulk of the New Zealand research supported Tinto's model of integration.

Another distinctive approach to examining student success has focused on student engagement. Engagement has two key components: time and effort students put into their studies and associated activities; and the ways their educational institution provides human and other resources to encourage student success (Kuh, Kinzie, Schuh, Whitt & Associates, 2005). To give students the best opportunities to engage with their study, tertiary institutions must create learning environments that incorporate peer mentoring, supplemental instruction, and provide an overall encouraging, supportive, inclusive and student centred learning environment (Crossman & Burdett, 2012). Zepke and Leach (2010), following a synthesis of 93 research studies from 10 countries, identify four research perspectives and 10 proposals for action to enhance student engagement including ensuring institutional cultures are welcoming to students from diverse backgrounds, investing in a variety of support services, and enabling students to develop their social and cultural capital.

Much of this student engagement research has been critiqued as 'mainstream', with alternative frameworks being composed by, for example, Nick Zepke (2017) who develops a more holistic view of engagement that incorporates promoting active citizenship and enhancing students' critical consciousness, and Kahu (2013) who emphasises the importance of socio-cultural context and including student's emotional states in engagement research. In a meta-synthesis of engagement research literature Zepke (2017) acknowledges that the mainstream view of student engagement has helped tertiary institutions discover what works in learning and teaching to result in successful outcomes for students, however it's potential is limited by the neoliberal agenda that has 'elective affinity' with the engagement research. For engagement research to reach its potential it needs to move "...away from neoliberal thinking and towards enabling learners to engage in a holistic, critical way in order to work for greater social justice." (p. 25). Zepke (2017) acknowledges at the start of his meta-synthesis that he is opposed to neoliberalism and his stance against neoliberalism and desire for more holistic outcomes for students, including greater social justice, appears common in the New Zealand literature (see also for example Houston, 2007, Paewai, 2011 and Shore & Wright, 2016), however, as can be seen from the number of studies published on mainstream engagement (see table 1), studies on what it means to engage students holistically is still in its infancy compared to mainstream research into student engagement.

Central to both the engagement and integration concepts is a corollary concept of adaptation whereby student engagement and integration is related to how well the students' cultural attributes are valued and accommodated by the prevailing culture at the institution (Zepke, N., et al. 2005). Students who don't share the prevailing culture of an institution because of their ethnicity, age, gender, socio-economic status or other factors may find themselves alienated from the institution and may be more likely to not engage and integrate into the institution's culture; in this case how well the institutions adapt to the students is a crucial factor in student success (Zepke, et al. 2005). Meanwhile, Duque (2014) perceives integration and adaptation as complementary, "with integration perhaps as a subset of adaptation" (p. 15).

For the purposes of the research described below, the terms student engagement, acculturation and adaptation will be conflated with student integration (please refer to table 2 below for a simplified definitions of terms). Settling on one overarching term to be used throughout this thesis to represent a complex, voluminous and contested conceptual model may be ingenuous, but is a pragmatic necessity.

**Table 2. Simplified definitions of terms related to student engagement**

<b>Term</b>	<b>Definition</b>	<b>Prominent authors cited</b>
Student integration	A student's sense of academic and social belonging (impacts on retention and graduation).	Tinto, 1993
Student engagement mainstream view	"... the time and energy students invest in educationally purposeful activities and the effort institutions devote to using effective educational practices."	Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008 p. 542
Student engagement holistic view	"...purposeful and active involvement in lifewide and lifelong learning... a metaphor; a prism through which we can discover diverse understandings of what can lead to effective learning and teaching."	Zepke, 2017 p. 18
Adaptation	Cultural attributes are valued and accommodated by the prevailing culture at the institution.	Zepke, et al. 2005
Acculturation	Students of one culture find that they must adapt themselves to a different culture.	Bai, 2016

## **2.6. Unique needs of international students**

As identified above, some of the research into the student success factors applicable to all students has included minority students and their needs, but in general mainstream research has not

addressed international students as a significant minority group. Specific research into international students perceptions, success and integration, however has identified a range of factors that apply uniquely to international students.

### **2.6.1. International research on quality service encounters and international students**

Transitioning to tertiary education in the first year is a challenge for all, but the challenge is even greater for international students-socially as well as academically (Henze & Zhu 2012). Outside of the classroom, studying in a foreign country throws up many challenges for international students, such as language, diet, homesickness, interpersonal problems and accommodation (Bai, 2016) and this stress is correlated with student depression (Hamamura & Laird 2014). The initial culture shock of a foreign tertiary institution can even trigger a regression through Maslow's Hierarchy of needs for those students that are having particular difficulty in adjusting (Newsome & Cooper, 2016).

The term 'acculturation' has been used to describe what happens when students of one culture find that they must adapt themselves to a different culture (Bai, 2016). For those students that are able to make it through the critical initial induction period and first year of study and successfully acculturate, they learn valued skills and conventions of western countries that are a crucial part of the education they receive via international tertiary education (Aydinol, 2013). Academically, it is the different academic rules, conventions and language in western countries compared to home countries that throw up the biggest challenge in the early stages of transitioning to tertiary education, with different conventions regarding referencing and plagiarism being particularly difficult for transitioning students (Henze & Zhu 2012).

A foreign classroom culture also poses particular challenges for international students.

International students may feel like outsiders in the classroom when they first arrive because their English may not be proficient enough to make them feel confident in class, and even if it is, they may come from a culture in which the role of the student is more passive than in the West. This is exacerbated if discussion is the main method of instruction in the classroom and presentations and group work are common assessments (Aydinol, 2013 and Henze & Zhu, 2012). Although language itself does not, on its own, predict academic success, it is often the difficulty of grappling with academic English that creates additional stresses for international students (Tynan & Johns, 2015).

However, a repository of good practice is beginning to build around how to assist international students transitioning in the classroom. Making additional initial classes in academic skills such as academic English, referencing and study skills available to international students has been shown to be successful in helping international students transition to a new international academic

environment (Yan & Sendall, 2016 and Fenton-Smith & Michael, 2013). Other initiatives include ensuring all material discussed in class is additionally provided in written form, establishing peer mentoring sessions, and ensuring interactions between international students and staff are conducted with mutual patience and respect (Ren & Hagedorn, 2012). Indeed, with the help of such initiatives, it has been found that by some measures, especially time spent studying, international students, even initially, can be more academically engaged than domestic students, and that “By their senior years international students ... generally do not differ from American seniors in their patterns of student engagement, including time spent socializing and relaxing” (Zhao, Kuh, & Carini, 2005, p. 224).

### **2.6.2. NZ research on Quality Service Encounters and international students**

New Zealand has been part of an international research programme entitled ‘International Student Barometer’ (ISB) that has surveyed international students in New Zealand approximately every two years since 2008 (International Graduate Insight Group, 2017a). The latest survey was conducted in 2017 and included results for 13 polytechnics and six universities in New Zealand, alongside a range of international tertiary education Institutes. These latest results continue a trend of New Zealand educational institutes faring well for student satisfaction indices across most data sets compared to other countries, with New Zealand polytechnics having an average of 89% satisfaction rating compared to an international average of 87%. However this headline figure masks significant differences between polytechnics in New Zealand (International Graduate Insight Group, 2017b).

In 2011 the New Zealand Ministry of Education commissioned BERL economics to conduct an in-depth research report into the International Graduate Insight Group New Zealand survey results. Its conclusions included the result that the strongest influence on international student satisfaction across all universities and polytechnics was the students’ learning experience (Generosa, et al., 2013). Students who were very satisfied with their learning experience were 45 times more likely to be satisfied with their overall experience, compared to students who were very satisfied with their living experience (four times more likely) and support services experience (three times more likely). Other notable results included the fact that English proficiency did not significantly influence international student satisfaction and that those aspects of the learning experience that students were most satisfied with were the quality of academic staff, learning facilities and learning with people from other cultures. Such in-depth analysis of the International Graduate Insight Group survey results has not been undertaken by the Ministry of Education in other years.

Other New Zealand research specifically on international students is sparse and has generally focussed on a narrow range of international students (e.g. East Asian or Indian students). The

results of the New Zealand research fairly well accords with the results of research undertaken in other countries and focuses on the acculturation of international students to their new social and academic environment.

A study at UNITEC found that international students had a larger gap between expectation and perception of actual service quality in all 5 service quality dimensions than domestic students (Sherry, Bhat, Beaver & Ling, 2004). A thesis on the experiences and perspectives of Indian international students at New Zealand universities (Kukatlapalli, 2016) concluded that there were no significant language challenges faced by the majority of Indian international students, which distinguishes them from East Asian students. Additionally, of 125 students involved in the research (109 surveyed and 16 interviewed), academic challenges were experienced only by 'a few' and this may have been a factor of not attending university orientations. Furthermore, despite the academic environment being different in New Zealand compared to India "...a majority of the students reported high levels of satisfaction with their learning experiences in New Zealand" (Kukatlapalli, 2016, p. 208).

A number of other studies deal predominantly with East Asian students and Chinese students particularly and focus on the problems caused by the mismatch between students' academic backgrounds and their new academic environment (Li, 2016; Guan & Jones, 2011; Campbell & Li, 2008; Johnson, 2008; Ho, Li, Cooper & Holmes, 2007; and Holmes, 2004). This mismatch has serious consequences for students:

"Inadequate English proficiency and unfamiliarity with the academic norms, assumptions, expectations, conventional rules, content knowledge, and interpersonal communication protocols in a new educational environment increased their acculturative stress, affected their sociocultural learning and knowledge acquisition, and impacted on their psychological well-being." (Li, 2016, p. 52)

In general the institutions consider resolving such issues to be the students' responsibility (Kukatlapalli, 2016); however the solutions for these issues put forward by those students involved in the New Zealand research and the researchers themselves often translocate issues back to the institutional space, identifying the institution, rather than the students as responsible:

"Having come to study in New Zealand, it was primarily the student's responsibility to 'adjust' to the new learning environment but to succeed, adjustments were needed at the

institutional level; for example, in terms of the material and delivery system used.” (Guan & Jones, 2011, p. 215)

Figure 4 below provides an overview of how student and institutional as well as academic and social factors impact an international student’s service encounter and quality of learning experience. The ideal solution to acculturation difficulties requires both the institution and the students themselves to work towards making the transition as smooth as possible. For example, most institutions provide supplemental support for all students including internationals but international students in particular seem reluctant to utilise this support, possibly as it is an admission of not meeting the performance standards of their course (Guan & Jones, 2011). Another example is that many institutions are attempting to internationalise their curriculum to cater for international students, for example by offering alternative assessments that incorporate internationally applicable content and topics. However for internationalisation to be successful, a paradigm shift is required throughout an institution and a refocus from the domestic perspective to an international one (Li, 2016). There is also a counter-argument to the need for institutions to deliver education in their international students’ context, and that is: students travel to New Zealand to get a culturally specific education, one that is not available to them at home, and institutions need to be wary of losing New Zealand’s educational uniqueness (McInnis, Peacock, Catherwood, & Brown, 2006).

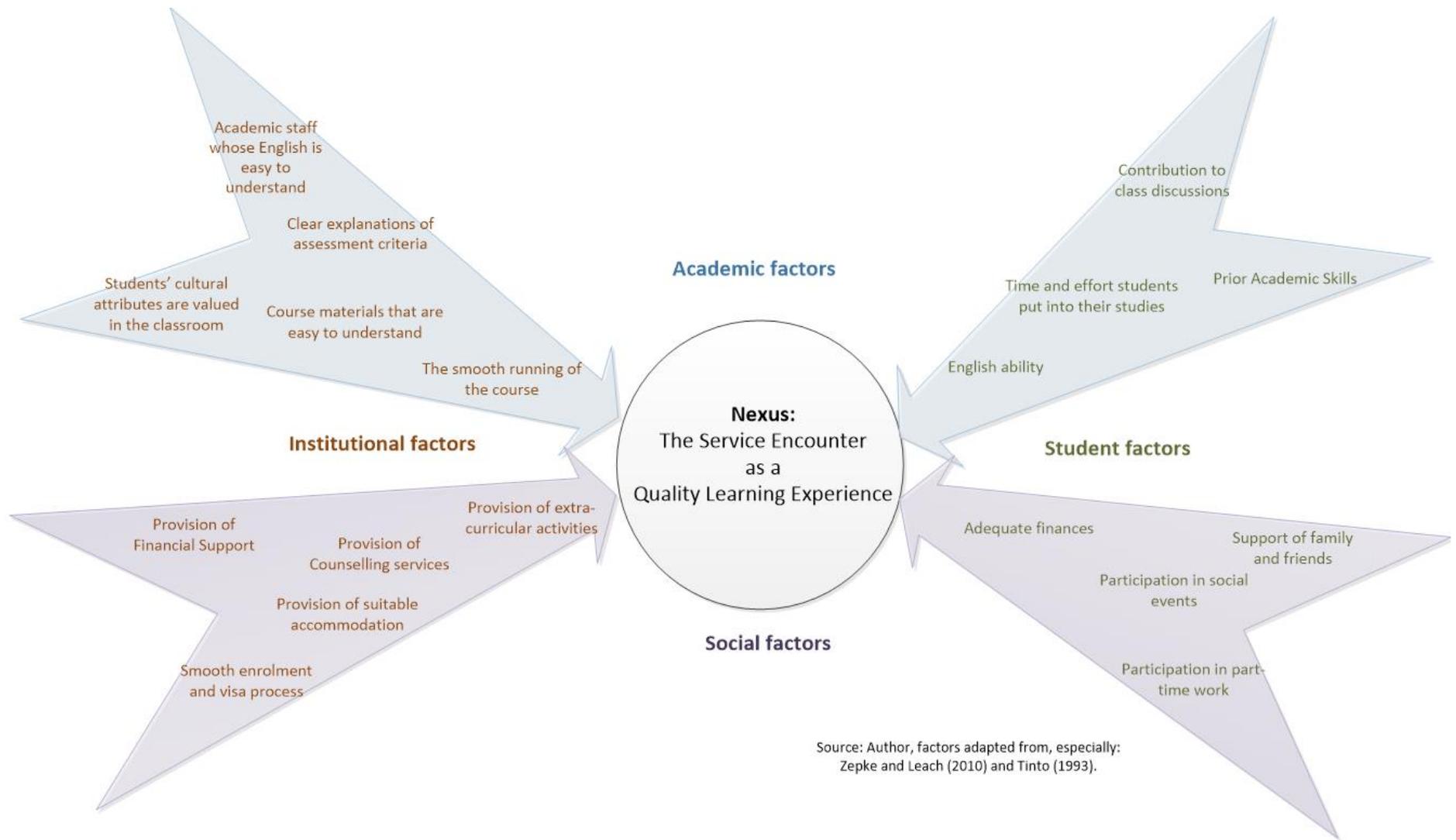


Figure 4. Literature review schematic 2

## **2.7. Summary of the most important aspects of the literature**

The literature has identified that the tertiary education industry in New Zealand has been transformed by the twin influences of neoliberalism and quality management. These harbingers of change have resulted in an international market in international tertiary students where individual countries and institutions attempt to maintain and grow student market share in a competitive environment. These students can be conceptualised as customers, enabling institutions to leverage the international quality management movement including techniques to improve service quality.

Integrating students into the academic and social spheres of the institutions in which they are enrolled has been shown to improve the likelihood of their success. The ability of students to integrate into an institution is particularly difficult for international students for various reasons including the disjunction between their cultural background and the culture of the society in which the learning takes place. While research in New Zealand has generally corroborated international research in these areas, there is evidence that it is the learning experience that is the prime determinant of international student satisfaction in New Zealand.

## **2.8. Research questions**

The literature is quite clear that for students to succeed they need to be integrated, socially and academically into their institution (for example see Tinto, 1993), but whether or not this integration is correlated with service quality from the customer's perspective is unclear. Due to the sheer practicality of researching all aspects of integration within the timeframe available, the research will focus on academic integration rather than integration as a whole. Academic, rather than social integration has been chosen as the New Zealand research indicates that it is the learning encounter that is the most crucial aspect of customer satisfaction for international students (Generosa, et al., 2013). It is felt that focused research on academic integration, rather than broader research on holistic integration will lead to more focused research outcomes.

The international research has shown that international students do appear to acculturate to their new environment and the institution at which they study over time (e.g. Bai, 2016) as their 'fit' with their courses improves but it is not clear if this improvement increases students' perception of learning experience quality.

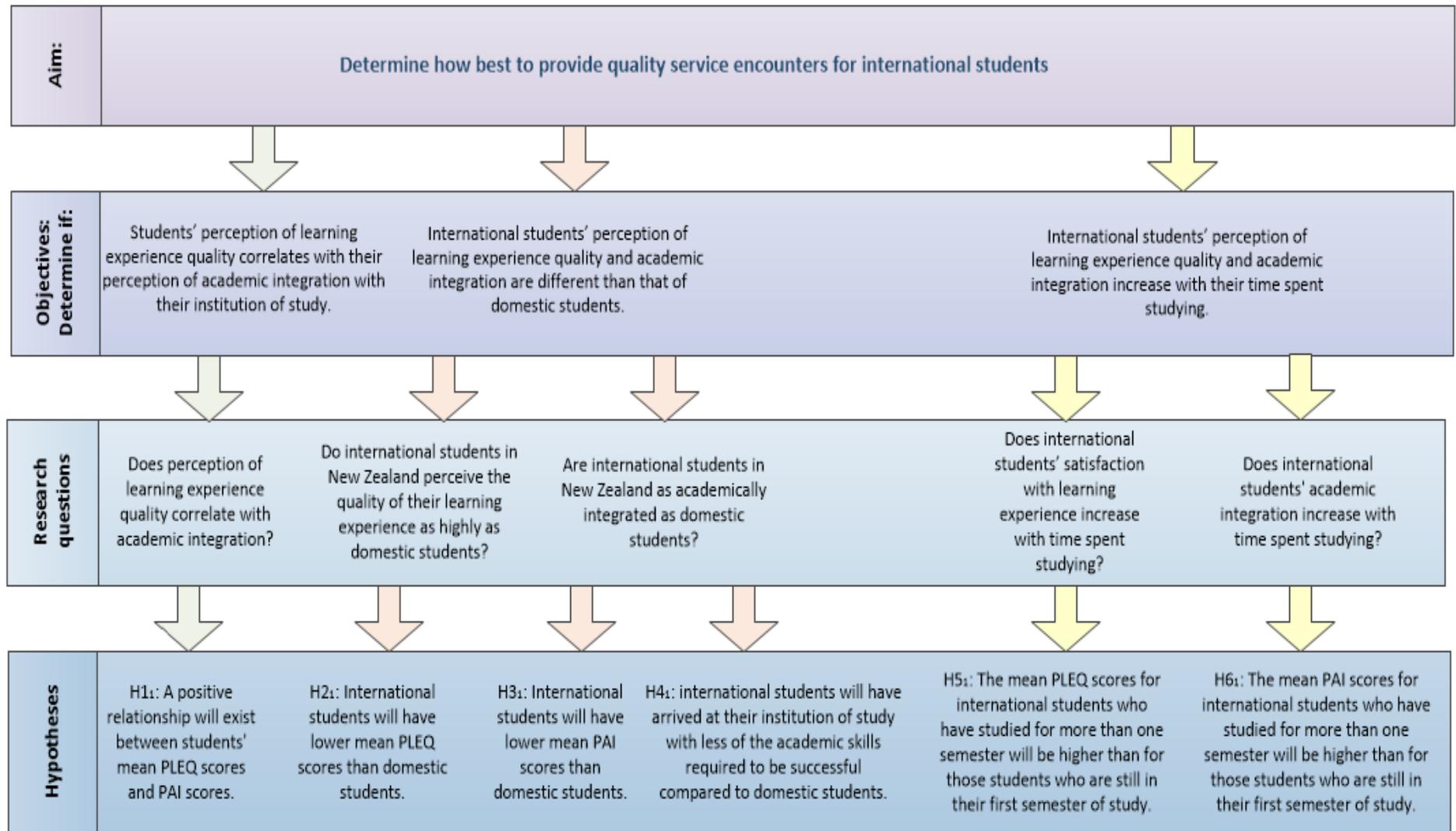
A further gap identified due to the paucity of studies in New Zealand is just how typical New Zealand's international student experience is to that of other countries. Are the students or the

conditions in New Zealand unique, or are they aligned with the international research? Also, are the international students' academic integration issues unique to them, or do New Zealand students also experience the same academic integration issues?

**So the questions we are left with are:**

1. Does perception of learning experience quality correlate with academic integration?
2. Do international students' have unique needs that are different than that of domestic students?
  - a. Do international students in New Zealand perceive the quality of their learning experience as highly as domestic students?
  - b. Are international students in New Zealand as academically integrated as domestic students?
3. Do international students' adapt to NZ system over time?
  - a. Does international students' perception of learning encounter quality increase with time spent studying?
  - b. Does international students' academic integration increase with time spent studying?

Please see figure 5 below for a summary of how the research aim, precipitated the literature review which identified the research gaps and resulted in the research questions that were used to formulate the hypotheses.



Source: Author.

**Figure 5. Alignment of aim, objectives, research questions and hypotheses**

N.B. PLEQ= Perception of learning experience quality; PAI= Perception of academic integration

### 3. RESEARCH METHODOLOGY

#### 3.1. Introduction

In this section the detailed description of the research questions, including the null and alternative hypotheses, is provided. The methodology of the research is outlined, including an overview of the epistemological and ontological perspective of the researcher and an appraisal of the alternative research methodologies. The research method is then explicated, including the data collection process and ethical considerations. The following acronyms are phased in over this section to improve readability where appropriate: PLEQ (perception of learning experience quality) and PAI (perception of academic integration).

#### 3.2. Detailed description of research questions and hypotheses

The literature review on tertiary education service quality identified the research questions listed above that are the subject of this research project. These research questions are repeated below along with corollary hypotheses including a rationale for the direction of each hypothesis based on the literature review.

1. Does perception of learning experience quality correlate with perception of academic integration?

H1<sub>1</sub> A positive relationship will exist between students' mean PLEQ scores and PAI scores.

Rationale: the literature is quite clear that increased academic integration aids student success (e.g. Tinto, 1993). The link between student success and perception of learning experience quality is hypothesised.

2. Do international students' have unique needs that are different than that of domestic students?

- a. Do international students in New Zealand perceive the quality of their learning experience as highly as domestic students?

H2<sub>1</sub> International students will have lower mean PLEQ scores than domestic students. Rationale: lower satisfaction has been found in previous studies (e.g. Shekarchizadeh, Rasli & Hon-Tat, 2011) and the hypothesised greater academic integration of domestic students compared to international students will reflect in their perception of perceived learning experience quality.

- b. Are international students in New Zealand as academically integrated as domestic students?

H3<sub>1</sub> International students will have lower mean PAI scores than domestic students. Rationale: integrating academically to the tertiary institution will be easier for domestic students who have progressed through the New Zealand secondary school system.

H4<sub>1</sub> International students will have arrived at their institution of study with less of the academic skills required to be successful compared to domestic students. Rationale: the education systems from which the international students have emerged are the product of a different cultural milieu and will teach academic skills that are appropriate for that culture rather than the academic culture students' encounter at their new institution.

3. Do international students' adapt to the NZ system over time?

- a. Does international students' satisfaction with learning experience increase with time spent studying? and
- b. Does international students' academic integration increase with time spent studying?

H5<sub>1</sub> The mean PLEQ scores for international students who have studied for more than one semester will be higher than for those students who are still in their first semester of study and

H6<sub>1</sub> The mean PAI scores for international students who have studied for more than one semester will be higher than for those international students who are still in their first semester of study.

Rationale: as students acculturate to the new learning environment over time, their PAI and therefore PLEQ will improve. Ideally this hypothesis would measure the same students at two different time periods, but due to time constraints on the research, students who have studied for longer will be compared to students who have just begun their studies.

This results in the following null and alternative hypotheses:

1. H1<sub>0</sub>: No relationship will exist between students' mean PLEQ scores and PAI scores.  
*H1<sub>1</sub>: A positive relationship will exist between students' mean PAI scores and PLEQ scores.*
2. H2<sub>0</sub>: there will be no significant difference in the mean PLEQ scores between international students and domestic students.  
*H2<sub>1</sub>: International students will have lower mean PLEQ scores than domestic students.*
3. H3<sub>0</sub>: there will be no significant difference in the mean PAI scores between International students and domestic students.  
*H3<sub>1</sub>: International students will have lower mean PAI scores than domestic students.*
4. H4<sub>0</sub>: there will be no significant difference in the level of academic skills international students arrived at their institution of study with compared to domestic students.  
*H4<sub>1</sub>: International students will have arrived at their institution of study with less of the academic skills required to be successful compared to domestic students.*

5. H<sub>5</sub><sub>0</sub>: There will be no significant difference in the mean PLEQ scores for international students who have studied for more than one semester compared to those students who are still in their first semester of study.

*H<sub>5</sub><sub>1</sub>: The mean PLEQ scores for international students who have studied for more than one semester will be higher than for those students who are still in their first semester of study.*

6. H<sub>6</sub><sub>0</sub>: There will be no significant difference in the mean PAI scores for international students who have studied for more than one semester compared to those students who are still in their first semester of study.

*H<sub>6</sub><sub>1</sub>: The mean PAI scores for international students who have studied for more than one semester will be higher than for those students who are still in their first semester of study.*

### 3.3. Research methodology

This research methodology section outlines the theoretical ideas relevant to the research method and justifies the use of the method that follows in the next section. The methodology favoured by the researcher is one that negotiates a winding but deliberate path along the continuum that bridges the extremes of the two dominant research paradigms-objectivist/quantitative versus constructionist/ qualitative. Indeed, few social research projects fit neatly into one of the research paradigms and in recent years there has been a growing understanding that research methods, data collection and analysis techniques do not have to be so constrained by epistemological and ontological ‘baggage’ (Bryman & Bell 2011). Table 3 below provides a neat, simplistic representation of the research affinities associated with the two dominant research paradigms. The general approaches chosen for this research are identified by being underlined.

**Table 3. Dominant research paradigms**

	Research paradigm affinities	
<b>Ontology</b>	<u>Objectivist</u> Real <u>Mechanistic</u>	<b>Constructionist</b> <u>Subjective</u> Abstract
<b>Epistemology</b>	<u>Positivist</u> Natural Science <u>Deductive-Tests Theory</u> Capable Of Being Defined <u>Empiricism</u> <u>Focus On Parts</u> <u>Reductionism</u>	<u>Interpretivist</u> <u>Social Science</u> Inductive -Generates Theory <u>Difficult To Define</u> Relationships Patterns Holism
<b>Research</b>	<u>Quantitative</u> <u>Numbers</u> <u>Theory Testing</u>	<u>Qualitative</u> Words Theory Emergent

<b>Research paradigm affinities</b>		
	Static <u>Structured</u> <u>Generalisable</u> Hard Reliable Data Experimental Design <u>Statistical Analysis</u> Replication Possible	<u>Process</u> Unstructured Contextual Understanding Rich, Deep Data <u>Case Studies And Observation</u> Analysis Of Language <u>Replication Unlikely</u>
<b>Application In industry</b>	Manufacturing Industries	<u>Service Industries</u>

(Adapted from literature, especially Grix, 2002, Bryman & Bell, 2011, and Bryman, 2012)

Ontology is the starting point of all research, being the image of social reality upon which theory is based (Grix, 2002). The ontological starting point for the research described here is an acknowledgement of both competing ontological perspectives- objectivist and constructionist. The 'classic' ontological approach to dealing with social phenomena is objectivist. This approach views social phenomena as external facts, so an organisation, an institution, is perceived as a tangible object with a hierarchy, processes, procedures, mission statements, etc. that can all be viewed, and understood as real (Bryman & Bell, 2011). The main alternative to this classic ontological approach is constructionism. Rather than perceiving an organisation as a tangible externality, an organisation is seen as emergent, it is in a continuous state of construction and reconstruction as the social actors that make up the organisation negotiate and renegotiate their relationships, socially constructing the organisation (Bryman & Bell, 2011).

Following the classic research agenda, this researcher views the organisation under study as a tangible entity with real students engaged in the purposive activity of education for the benefit of both the students and society. This researcher does however acknowledge that the educational experience of the students is co-constructed, being built on the social relationships between the students, their peers and the staff of the institution and it is this co-construction that results in the nexus of the learning experience.

Whilst ontology addresses what the world consists of, epistemology, meanwhile, deals with what we can know about the world, or more precisely what we believe we can know, and how we can find it out (Grix, 2002). Here, again, there are two dominant paradigms- the positivist approach has been inherited by social researchers from the natural sciences, which sets out to test theory (deduction) and is associated with quantitative research techniques, it contrasts with the interpretivist approach which acknowledges the subjectivism associated with research activities, sets out the build theory (induction) and is associated predominantly with qualitative research techniques (Grix, 2002).

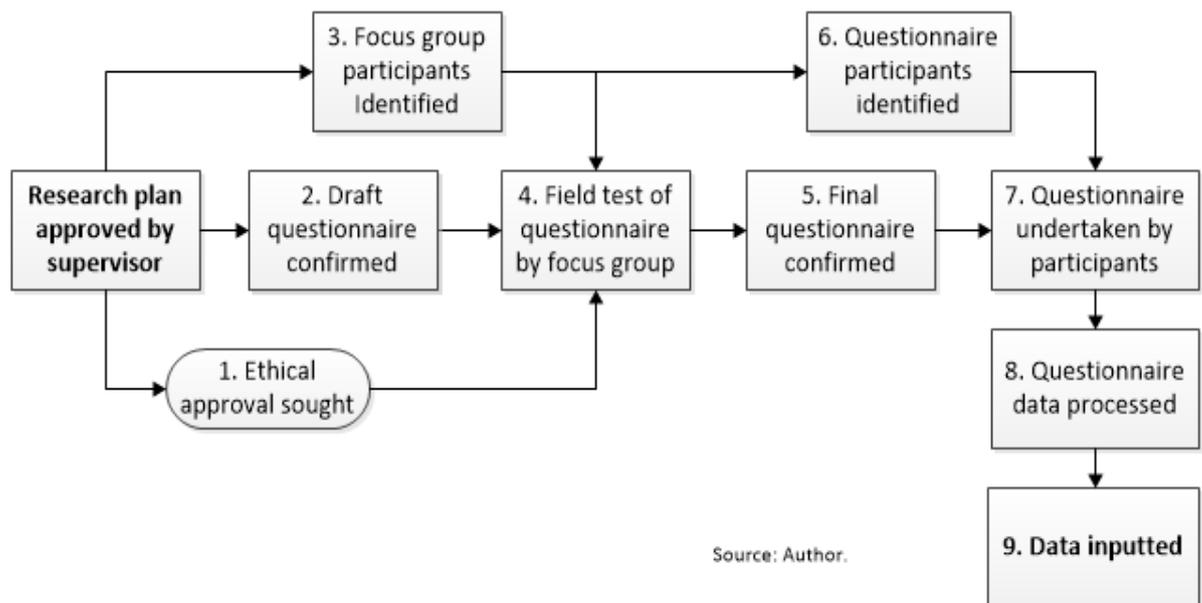
Despite qualitative research having a natural affinity with the social sciences, it is quantitative research that has dominated business research (Bryman & Bell, 2011) and educational research, often in an attempt to gain legitimacy (Heertum & Carlos, 2011). A content analysis of three major higher education journals has identified that in the period from 2006-2010, 75% of published articles used quantitative methods, whilst 20% used qualitative methods and 5% used mixed methods (Wells, Kolek, Williams & Saunders, 2015). Indeed, mixed methods research has become increasingly common in business and social research as utilising both quantitative and qualitative data can maximise reliability and validity (Bryman & Bell 2011).

Somehow it is felt that both research paradigms are fundamentally flawed, at least in regards social research. Nevertheless, one overarching paradigm had to be chosen to apply to this research project, and in the end, the opportunity to test and corroborate theory via hypothesis testing was ultimately beguiling. As such, this researcher followed the general trend of the business and educational research identified above and opted for the positivist research approach albeit with some qualitative data. Even if the data gathered as part of this research project provides only one snippet of evidence in support of one of the research hypotheses, then that is one more snippet to advance the robustness of that hypothesis. Over time such snippets of evidence accumulate and corroborate some hypotheses whilst falsifying others, guiding researchers and managers as they continually address the needs of international students.

The shortfalls of using a positivist research method in the social sciences are accepted, especially the difficulty in replicating results (Loken & Gelman, 2017) which is such a fundamental requirement for objectivist/quantitative research, however the shortfalls in constructionist/qualitative research, especially the subjectivity in interpretation and the reliance on anecdotes were considered more egregious.

### **3.4. Research method**

This section firstly outlines the research method chosen, and then describes the research activities in the chronological order that they were undertaken. Ethical considerations are discussed in some depth and the development of the questionnaire including the field test of the draft questionnaire by the focus group is described. The process of identifying the questionnaire participants and the undertaking of the questionnaire are outlined, along with the processing and inputting of the data. A diagrammatic overview of the research method used in this study is provided in figure 6 below.



**Figure 6. Detail of research method**

### 3.4.1. Choice of research method

Once a decision was made to test hypotheses as the main method of research as described above, given that the research would be conducted in a social setting, a mixed methods approach seemed most appropriate. This would enable the research to combine what is valuable in both the quantitative and qualitative paradigms.

A case study was chosen for the research for both practical and theoretical reasons despite the contention that the external reliability and validity of a case study are low, so that is difficult to generalise the results of a case study to other institutions (Bryman, 2012). The justification for a case study was based on the theory that all institutions are different and to fully understand the intricacies of the student experience of any one Institute requires research that focuses on that one Institute. This view has surfaced a number of times in the literature reviewed in section 3 of this study, for example, research undertaken in Ireland identified that satisfaction with a student's particular institution of study was the strongest factor influencing satisfaction with study (Finn & Darmody, 2017), Duque (2014) notes that the unique challenges that each institution faces are obscured by multi-institutional studies, and Zepke et al.'s (2005) analysis warns that individual institutions face unique retention issues and that research must be conducted at the institutional level to improve retention.

In addition, given the decision to test hypotheses, a case study can be seen as ideal for doing this as single cases are useful for their ability to refute hypotheses (Silverman, 2014). According to Karl Popper's theory of falsification, just one observation is enough to falsify a proposition (Parvin &

Meadowcroft, 2010), so due to their in-depth nature, a case study is one of the most efficient methods for testing hypotheses and generating data that may falsify hypotheses (Flyvbjerg, 2006).

Practically speaking, gaining access to busy students who are often already over evaluated is not easy and because of the researcher's employment at a New Zealand Polytechnic, the easy access to that Polytechnic's students could not be overlooked. Consideration was given to extending the research to multiple Polytechnics, but this was not pursued due to the fact that in the competitive market of international student enrolment, a researcher from a rival tertiary institution is unlikely to gain the same access to students that was possible at the Institute where the study was undertaken.

Once the decision was made to research students at one institution, it was decided to do so over the two campuses of the institution that had the bulk of the international student enrolments-one in Auckland and one in Napier New Zealand. Graduate and postgraduate students were chosen as the subjects as these were identified in section 2 as being of most importance to tertiary institutions. Whilst the aim of the research was to determine how best to provide quality service encounters for international students specifically, following the outcomes of the literature review, the research questions identified the importance of contrasting the experience of international students with domestic students. To this end, it was decided to gather data from predominantly international students whilst ensuring that enough domestic students were incorporated in the data to provide a comparison.

In accord with the research epistemology, the choice of research instrument, being a quantitative questionnaire was quite straightforward as this would be able to produce numerical data with which it would be possible to test the hypotheses and statistically analyse the results. It was decided to convene a focus group to field test the draft questionnaire to ensure it could be completed within a reasonable timeframe, to know if participants struggled with understanding any aspects of the questionnaire and how long the questionnaire took for the typical participant. To ensure that the research method would collect both quantitative and qualitative data, an open-ended question was included in the questionnaire design to allow students to feedback their own interpretation of their learning experience.

#### **3.4.2. Ethical considerations**

Following the research plan being approved by the research supervisor, ethical approval was gained, both from the University in which the researcher was enrolled (Massey University approval reference SOA 16/71), as well as the Polytechnic at which the research was undertaken (EIT

approval Reference 16/60). The process of gaining this ethical approval was entwined with refining the data collection methods to ensure quality data was gathered. The Massey University Human Ethics Committee Code (2015) and the methods recommended by Cooper and Schindler (2008) were used to guide the ethical consideration process.

The researcher is employed at the Institute where the research was undertaken, his role being in curriculum development and systems administration. Contact between the researcher and students at any time is rare and following the data gathering, there was no contact with the participating students. The researcher was unknown to the participants of the study and to most of the academic staff involved with the participants, and was not, nor is in a position to influence academic grades or outcomes of the participants. Nevertheless, because of the researcher's position, extra care was taken to ensure that the confidentiality of the participants was not breached and that the researcher's preconceptions and job role did not affect the objectivity of the research.

The research was designed so respondents were respected and did not suffer discomfort, embarrassment or loss of privacy. The nature of the research, being information gathering from the participants, meant there was minimal risk of harm to the participants.

For both the focus group and the physically administered questionnaire sessions, the researcher explained the benefits of the study to all participants, explained their rights and protections, obtained their informed consent and assured the participants that they could refuse to answer any question or withdraw from the research at any stage. An extra mitigation measure to ensure that individual participants were not able to be identified from the questionnaire data entailed having students identify their level of study and subject area rather than identifying their programme of study. Focus group participants were given the opportunity to review the notes from the focus group before they were finalised and all focus group and questionnaire participants, as well as all affected polytechnic staff were informed via email of the outcomes of the research (if they had provided their email address for this purpose).

### **3.4.3. Use of incentives**

The ethical approval gained included approval to use incentives during data gathering. The use of incentives to participate in research activities is a contentious ethical issue. If incentives are given, there is concern that the quality of data may be reduced and participants may wish to please the sponsor in the way that questions are answered (Simmons & Wilmot, 2004). However, a review of the extant literature on the subject (Simmons & Wilmot, 2004) uncovered little evidence of these

concerns and indeed, many studies point to the quality of data being improved by incentives because of an increase in response rates, reduced nonresponse on individual items and more comments to open-ended questions. In a separate review of the use of research incentives, it was found that, as long as all other ethical considerations for the research undertaken (including the power relationship between the researcher and the participants) were controlled for, the use of incentives was found to be generally benign (Grant & Sugarman, 2004). Insofar as whether incentives should take the form of monetary or other forms of compensation (such as lottery tickets, donations to charity or gifts such as fridge magnets) monetary incentives given directly to the participants have been identified as the most effective (Simmons & Wilmot, 2004). In addition, for some researchers, including this one, not giving payments to research participants is considered unethical, and payment can be seen as a way of 'beginning to equalise' the uneven power relationship between the researcher and the participant (Head, 2009).

In the end, incentives were used for the focus group participants, but not for the questionnaire participants. The options available for the questionnaire participants (a shared meal, a draw for a voucher, a draw for fees discount) were considered too unwieldy and the time commitment of the students was minimal (10-15 minutes compared to 90 minutes for the focus group). The incentive used for the focus group participants consisted of reimbursing those expenses relating to time spent in participating in and travelling to and from the focus group. It took the form of either a supermarket or fuel voucher to the value of \$50 which was considered proportionate to the imposition on the participants (Cooper & Schindler, 2008). The incentive was advertised to all of the students in advance as part of their invitation to research, along with their right to withdraw from the research at any stage.

### **3.5. Questionnaire Design**

The design of the questionnaire was informed by two major international questionnaires (HEdPERF and NSSE) but utilised original scales to more effectively measure students' perception of learning experience quality and academic integration.

#### **3.5.1. Source of questions**

(A copy of the final questionnaire used is provided in appendix 9.1)

The intention was to develop a focused, quick and easily understood questionnaire to measure students' perception of learning experience quality and academic integration at the Institute using the Likert scale. Two well utilised and field tested questionnaires- HEDPERF (higher education

performance measurement) and NSSE (national questionnaire of student engagement)- were used to inform the basis of the draft questionnaire. The HEdPERF questionnaire provided the basis to measure learning experience quality and the NSSE questionnaire provided the basis to measure academic integration. Adapting questions sourced from tools that had wide use in educational settings would help to improve the validity of the final questionnaire (Wilson, 2014).

HEdPERF is discussed at length in section 2, while a brief description of NSSE follows. The NSSE is an annual questionnaire measuring student engagement through three distinct measures: time spent studying, time spent in co-curricular activities, and a global measure of engagement in effective educational practices (Kuh, Cruce, Shoup, Kinzie & Gonyea, 2008). In their entirety the questions identify student behaviours and activities that measure student engagement and allow institutions to identify teaching practices and other conditions that they can influence to improve student engagement. Over 1500 institutions have utilised the NSSE over its lifetime and it is now administered in the USA and Canada by the Indiana University School of Education Center for Postsecondary Research (Indiana University School of Education, 2017). The NSSE has also been picked up by other institutions around the world and has spawned replica questionnaires in Australia, China, South Africa, Ireland and the United Kingdom (Zepke, 2017).

The NSSE uses a five-point Likert scale whereas the HEdPERF questionnaire uses a seven point Likert scale. As mixing the two scales would not have been tenable and it was felt that simplicity was preferable to detail for participants a five-point Likert scale was used.

### **3.5.2. Time commitment**

Both HEdPERF and NSSE take a significant time commitment from participants. HEdPERF consists of 78 questions (sourced from Firdaus, 2005), while the 2017 NSSE consists of 18 PDF pages (sourced from Indiana University School of Education, 2017). The commitment from students to undertake either of these questionnaires was considered too great and it was decided to limit the time required to undertake the questionnaire to 15 minutes for both ethical and practical reasons.

Ethically, it was felt that a greater imposition on students' and lecturers' time was not tenable. Both domestic and international students had invested a lot of time and money into undertaking their study and it was considered incumbent on the researcher to place as minimal time burden on them as possible as the research would not benefit participants individually (although it may benefit future students in the medium to long-term through the research findings being disseminated throughout the institution under study and through the wider educational system via publication of the thesis and any subsequent journal articles). Also the students complete a

standard cycle of institutional questionnaires, as well as periodic external and other research questionnaires. Furthermore, lecturers opened up their classrooms so that the researcher could conduct the questionnaire in person so the researcher was taking up time that they would have otherwise spent engaged in teaching and learning activities with the students.

Practically, as all participants were informed that participation was voluntary, the students needed to be assured that the time commitment for participating in the questionnaire would not be onerous, or they may try to leave prior to completing the questionnaire. Likewise, institutional management, as well as each lecturer individually, had to agree to the research activities, including access to the students during timetabled teaching time, so limiting the time required to the minimum facilitated agreement.

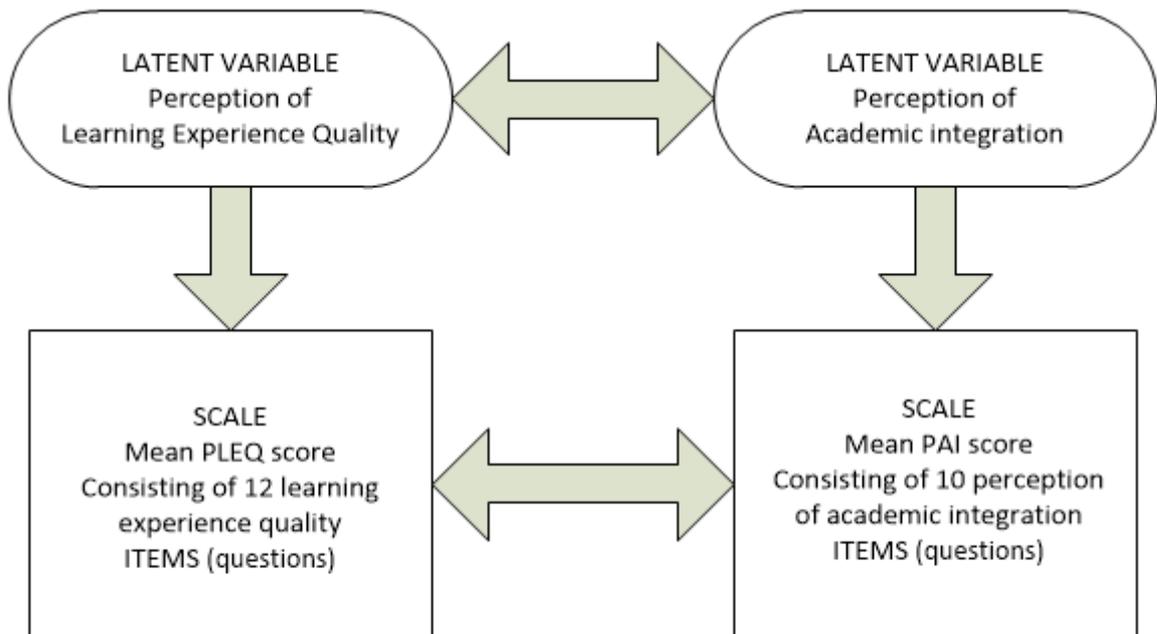
It is acknowledged that not using the established questionnaires in their entirety meant the validity and reliability of the final questionnaire used was unknown and that it was not possible to directly compare results with other researchers who have used their original versions. However it was felt that these drawbacks were outweighed by the gains resulting from the development of an instrument targeted for the research questions and the population under study.

### **3.5.3. Scale construction**

During the synthesis to identify questions that most closely matched the concepts of Perception of Learning Experience Quality and Academic Integration that were identified in the literature review, it was discovered that Academic Integration (a manifest variable (DeVellis, 2017)) would not be able to be directly measured as part of this research project. To measure academic integration as a manifest variable would require access to students' course work, grades and tutor feedback, or alternatively the development of a specific test that could measure student's ability to write in an academic fashion, synthesise and summarise complex information, their knowledge of plagiarism, et cetera. This would require more time and resource than was available, especially considering the ethical implications, and it was decided to instead measure students' Perception of Academic Integration. Indeed, the NSSE questionnaire also actually measures students' perception rather than academic engagement per se as the questionnaire requires students to self-report on indicators of engagement.

Thus, the two concepts (hereafter referred to as latent variables as they are not directly observable (DeVellis, 2017), settled upon were Perception of Learning Experience Quality (PLEQ) and Perception of Academic Integration (PAI). Approximately 10 targeted questions (items) were used to create two scales with which to measure each latent variable (see figure 7 for a visual

representation of this relationship). It was intended that these scales would estimate the actual magnitude of PLEQ and PAI perceived by the students at the time and place at which the questionnaire was completed, i.e. the perceptions of the students would be reflected in the items that made up the scale and that by calculating the mean score of these items, an estimate of their overall PLEQ and PAI would result.



NB. The arrows from the latent variables to the scales represent the direction of causation, i.e. the latent variable is a cause of the item scores.

The arrows between the two latent variables and between the two scales represent the direction of the relationship predicted between the latent variables, and therefore the scales.

Source: Author, adapted from: DeVellis, 2017

**Figure 7. Relationship of research variables to scales**

To help determine the reliability of the scales, their internal consistency was able to be determined via statistical analysis following the data collection (see section 4).

In addition, for each latent variable a single, distinct question was asked that would provide a means of triangulation to help determine the construct (convergent) validity of the scale generated by the amalgamated questions (Wilson, 2014). An overall learning experience quality question was included to provide a general measure of student's perception of the quality of the learning experience at the Institute under study, while a question on the number of overall hours studied by each student outside the classroom was included to provide a general measure for academic integration (this question is asked as part of the NSSE).

#### **3.5.4. Additional questions**

As well as the PLEQ and PAI questions adapted from HEdPERF and NSSE, additional questions were developed by the researcher relating to the source of academic skills, open-ended feedback, and student background data. The additional questions concerning the source of academic skills were included to help understand the value of providing supplemental tuition in academic skills (referencing, essay writing, report writing, presentation skills, etcetera) at an institutional level, following the support for this in the literature (Yan & Sendall, 2016 and Fenton-Smith & Michael, 2013). The one open-ended question was incorporated within the questionnaire to give participants the opportunity to express additional perceptions of their learning experiences at the institution under study, whilst further background data were requested so that exploration of other themes of importance to the student learning experience could be undertaken.

#### **3.5.5. Negatively worded questions**

Another consideration for the questionnaire used in this study was to avoid negatively worded questions. Studies by both Johnson, Bristow & Schneider (2004) and Roszkowski & Soven (2010) report that incorporating a small number of negatively worded questions in a generally positively worded questionnaire confuses many questionnaire respondents. Furthermore, Johnson, Bristow & Schneider, (2004) go on to suggest that the confusion is exacerbated by Likert style questions while Roszkowski & Soven (2010) suggest that a questionnaire consisting of equal numbers of negatively and positively worded questions may sufficiently prime the reader to beware of negatively worded items, but given the complication of varied English language skills amongst the questionnaire participants, this seemed risky. And while a number of questions in the HEdPERF questionnaire, and also the NSSE are negatively worded, Parasuraman et al. have subsequently reworded all the negatively worded items in SERVQUAL positively (Firdaus, 2005).

In the end, no negatively worded questions were included in the questionnaire, but one question was included that ran counter to the other questions. This was because the question was felt to be important to the PAI scale and to align it with the other questions in the questionnaire would require phrasing it negatively. It was felt also that it would be a check of engagement with the questionnaire. The one question in question (sic) was one that contributed to the PAI score scale - question 18 "I sometimes come to class without completing readings or assignments". A student disagreeing or strongly disagreeing statement would indicate a high PAI score, whereas for all other questions disagreeing or strongly disagreeing with a statement would indicate a low PAI score.

### **3.5.6. Draft Questionnaire**

After a number of revisions, the draft questionnaire consisted of 36 questions, split evenly between learning experience quality and academic integration (total of 26 questions) and 10 supplementary questions to understand participants' background data. Some definitions were also provided at the start of the questionnaire to ensure that participants understood the meaning of 'academic', 'academic skills' and 'academic staff'. Statements regarding the confidential and voluntary nature of the questionnaire were also included. It was predicted that when the focus group field tested the questionnaire that it would take in the region of 15 minutes to complete and that it would be easily understood. Prior to the initial focus group, the questionnaire was also reviewed by academic and international staff members at the institution under study to confirm that it was appropriate for the participants for whom it was designed (Wilson, 2014).

### **3.6. Focus group**

Eight participants for the focus group were advertised for, this number being identified as suitable for a focus group to enable a range of views to be heard within a discussion in one setting (Wilson, 2014). The participants were sourced from a diploma programme at the Institute that had a large proportion of international students. A diploma programme was chosen as the participants would not also be captured in the final questionnaire distribution. An equal number of international and domestic students were advertised for, with the incentive for giving up an hour and a half of their time being a voucher-either for petrol or groceries (see ethical considerations above).

At the beginning of the focus group a pre-prepared schedule was developed that specified the focus group questions and included an introduction that was read out and discussed with the participants. The introduction to the schedule described how the focus group would proceed, the students' rights regarding the voluntary nature of the responses, and the confidential nature of the data produced. Permission from the students was sought to record the discussion on a dictaphone. The researcher took notes during the focus group, but having the session recorded allowed the researcher to edit and amend the notes to ensure that they reflected the discussion. Following the occurrence of the focus group, the edited notes were emailed to the participants for further editing, however none of the students responded.

Overall the focus group responded positively to the draft questionnaire. The timing of the questionnaire was about right (first students were finished just after 10 minutes from beginning, and all students were finished shortly after 15 minutes) and the discussion around the content of the questionnaire was lively, with the domestic students dominating the feedback.

### 3.7. Conduct of questionnaire

The questionnaire was implemented by the researcher predominantly in physical form at the end of timetabled classes, with a small number of questionnaires being electronically distributed to ensure students in the health science programmes who were absent from campus at the time the questionnaire was undertaken.

#### 3.7.1. Questionnaire finalised

Undertaking the focus group led to two modifications of the questionnaire: a reduction in the number of questions from 36 to 35 and the simplification of some of the language for those questions where the students identified they had difficulty understanding the question. The final questionnaire is provided in appendix 9.1 and the final mix of questions is shown in table 4 below.

*Table 4. Final questionnaire question breakdown by type of question*

Type of question	Detail	Question #
PLEQ	12 Learning experience quality Likert style questions	1-12
PAI	10 Academic integration Likert style questions	13-22
Academic integration	Two questions on the source of students' academic skills	23 & 24
Academic integration	One question measuring hours spent studying outside the classroom.	25
Learning experience quality	One question measuring overall perception of institutional learning experience quality.	26
General comment	One question offering participants the opportunity to comment on their overall learning experience	27
Background	Seven questions on the background of participants and the type of study they are undertaking	28-34
Data dissemination	One question offering participants the opportunity to include their email address to receive a summary of the questionnaire results	35
	<b>Total</b>	<b>35</b>

#### 3.7.2. Questionnaire participants identified

After evaluating possible sampling procedures against the purpose of the project and thinking carefully about the parameters of the population required to undertake the research proposal, purposive sampling was used to identify questionnaire participants (Silverman, 2014). In this case the participants required to undertake the research were predominantly international students at graduate and postgraduate level. It is international students that are the focus of this research, and especially those studying at graduate and postgraduate level. Also required for participation in the

questionnaire was a subset of domestic students who could provide the comparison needed with the international students to test the hypotheses.

The strategy taken to achieve the right mix of students was to undertake the questionnaire in those graduate and postgraduate programmes with the highest number of international students in semester one 2017 at the Institute under study-these programmes are identified in table 5 below. (NB. at Polytechnics in New Zealand a student enrolls in a Programme of study which consists of a number of individual courses whose combined successful completion results in the award of a qualification.) All of these programmes fit into four general subject categories: business (includes applied management and professional accounting), computing (includes information technology), oenology and health science.

**Table 5. Graduate and postgraduate programmes at the Institute under study**

<b>Programme</b>	<b>Number of international students (semester one 2017)</b>
Graduate Diploma in Business	104
Post Graduate Diploma in Applied Management	35
Post Graduate Diploma in Information Technology	29
Graduate Diploma in Oenology/ Viticulture	23
Post-Graduate Diploma of Health Science	21
Graduate Diploma in Professional Accounting	8
Master of Applied Management	6
Master of Health Science	1
Total	227

### **3.7.3. Questionnaire undertaken by participants**

One upshot of the ethical approval process and discussion of the research and questionnaire with senior academic staff members at the institution under study, was the suggestion that distributing the questionnaire in person, in targeted classes would result in a much more efficient data gathering process, compared to offering the questionnaire online and attempting to coerce students to complete it outside of classroom hours. Having the researcher distribute and collect paper copies of the questionnaire personally in classes undertaking the questionnaire would ensure:

- a speedy return and a high return rate for those invited to undertake the questionnaire

- the researcher could fully inform participants of the voluntary nature of the questionnaire and reassure them that their responses or non-responses would in no way affect their studies at the Institute
- personal contact between students and the researcher

There is a general feeling at the Institute that students are over surveyed, both in terms of research projects undertaken by staff and students and quality assurance and improvement initiatives undertaken by the Institute for internal and external audiences. There had been instances recently at the Institute in which online questionnaires had derisory participation rates and despite repeated follow-up, students could not be coerced into completing them. So hard copies of the questionnaire were distributed and collected in timetabled classes by the researcher. The classes chosen were those that enabled access to the maximum amount of students, without the possibility of any student participating twice.

Unfortunately, the timing for the data collection coincided with a long period of absence of the health science students from the Taradale campus so ultimately it was decided to conduct the questionnaire with these students through commercial online questionnaire software (Qualtrics). This did mean that questionnaire distribution and completion was undertaken with two different methodologies, possibly resulting in a skewing of the results of the health science students as compared to the other participants. However, it was felt that any difference in the responses between the paper and online participants would be minimal and that the benefit of being able to capture the health science students outweighed the risk. By including the health science students, it was ensured that all international students in graduate and postgraduate programmes at the institute under study were captured in the population sampled.

#### **3.7.4. Processing and inputting of data**

Following the undertaking of the questionnaire the data was processed. The paper-based data was coded and transferred to an Excel spreadsheet, whilst the online data from qualtrics was exported to Excel and then the two databases were combined. Three paper-based questionnaires were discarded as the participants had marked all of the Likert style questions the same, while two online questionnaires that were started but not finished were still incorporated into the results (Pallant, 2016). The Excel data was then exported into the statistical software package SPSS which had the functionality to perform the required statistical analyses. All variables were named appropriately after the data was inputted into SPSS.

One question in the questionnaire sought general feedback on the participants learning experience at EIT (question 27). The question was framed so that participants only provided feedback if they wished to and almost half of or participants answered this question (46%). These comments were coded manually by the researcher using content analysis, i.e. the data was reviewed, then categories were established that represented the data, and the number of instances that the data fitted into those categories was counted (Silverman, 2014).

## 4. RESULTS

### 4.1. Introduction

The results of the data-gathering are described below as follows: firstly, an overview of the background data of the respondents is provided along with a consideration of the statistical significance of the results. Then the results measuring the internal consistency of the two scales central to the research project - PLEQ and PAI - are presented followed by the results of the hypotheses. A Pearson's product moment correlation coefficient (Pearson's  $r$ ) was used to test hypothesis 1, as testing this hypothesis required determining the strength of the relationship of two variables (PLEQ scores and PAI scores) within the same group. While independent t-tests were used for those hypotheses that required a comparison of the means of the two separate groups identified to determine whether the difference between them was significant (hypotheses 2- 6). The significance threshold for the t-tests was set at .05.

Following presentation of the hypotheses results, results of the further pattern exploration are outlined. One way analysis of variance (ANOVA) and independent samples t-test were used to determine if the differences between any of the population subgroups regarding PLEQ scores and PAI scores were statistically significant. SPSS computer software was used to undertake the statistical tests and to generate the scatterplots and tables that are presented below.

#### 4.1.1. Overview of population

A brief overview of the respondents' background data is provided here (a complete presentation of the raw data is provided in appendix 9.2). The participation rate for the paper-based version of the questionnaire was 100% (before removal of three spoilt questionnaires), while the participation rate for the online questionnaire that was distributed to postgraduate health science students only was 24%. This resulted in a total of 165 completed questionnaires- 127 paper-based and 38 online.

Of the 165 completed questionnaires, 126 were from international students and 34 from domestic students, while five students who completed the questionnaire did not provide this information. All respondents were studying at graduate or postgraduate level, with 59 studying a graduate diploma, 81 a post graduate diploma, 17 a masters degree and three a post graduate certificate (five nonresponses). The most common nationalities were Indian (84), New Zealand (29) and Chinese (18). Approximately half of the postgraduate health science students identified as online students rather than identifying with the Taradale campus at which they were enrolled (most health science post graduate programmes are workshop based).

#### **4.1.2. Statistical significance**

For the overall student population, at a 95% confidence level the margin of error of the results is 6.05 % (165 students in graduate or postgraduate study completed the questionnaire of a total of 444 students in graduate or postgraduate study at the Institute under study). This results in an acceptable degree of representativeness for the international student results as compared to the general population of graduate and postgraduate international students at the Institute under study.

For the international student population, at a 95% confidence level the margin of error of the results is 5.84 % (126 international students in graduate or postgraduate study completed the questionnaire of a total of 227 international students in graduate or postgraduate study at the Institute under study).

For the domestic student population, at a 95% confidence level the margin of error of the results is 15.47 % (34 domestic students in graduate or postgraduate study completed the questionnaire of a total of 217 domestic students in graduate or postgraduate study at the Institute under study).

#### **4.2. Internal consistency of scales**

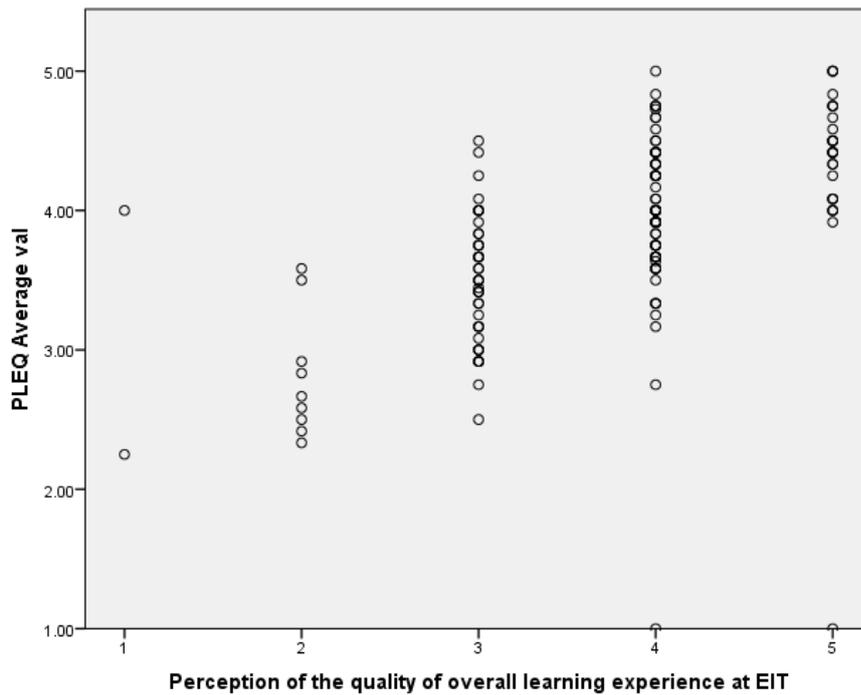
Before presenting the results of the research hypotheses, it is important to discuss the results testing whether the two scales -PLEQ and PAI- were internally consistent, as without these being internally consistent, the results of the hypotheses testing would not be valid.

##### **4.2.1. PLEQ scale**

To measure the internal consistency of the PLEQ scale used for the hypothesis testing, a Cronbach's Alpha coefficient for PLEQ scores was undertaken with the following results: PLEQ scores =.932, thus confirming that the PLEQ scale as conceptualised for this study is internally consistent and reliable for hypothesis testing.

As discussed in section 3, a single, distinct question on student's overall perception of the quality of their learning experience was included to provide a comparative measure to help determine the validity of the PLEQ scale. The results from this question were as follows: two respondents rated the quality of the overall learning experience at EIT as very poor, nine as poor, 43 as fair, 80 as good and 28 as very good. The mean PLEQ score for all students was 3.832 (standard deviation 0.676). A Pearson product moment correlation coefficient was undertaken to determine if the student's overall perception of the quality of their learning experience correlated with their PLEQ

score. The correlation was significant ( $r=.554$ ,  $n=162$ ,  $p < .001$ ). This is shown graphically in figure 8 below.



**Figure 8. Scatterplot of PLEQ to student's overall perception of the quality of their learning experience**

#### 4.2.2. PAI scale

To measure the internal consistency of the PAI scale used for the hypothesis testing, a Cronbach's Alpha coefficient for PAI scores was undertaken with the following results: PAI scores = .716, thus confirming that the PAI scale as conceptualised for this study is internally consistent and reliable for hypothesis testing.

As discussed in section 3, a single, distinct question on the number of overall hours studied by students outside the classroom was included to provide a comparative measure to help determine the validity of the PAI scale. The overall mean number of hours studied outside of timetabled course time for full-time students was 19.82 hours (standard deviation 10.175), for part-time students was 12.76 hours (standard deviation 7.388) and for all students was 18.21 hours (standard deviation 10.012). The mean PAI score for all students was 3.916 (standard deviation 0.442). A Pearson product moment correlation coefficient was undertaken to determine if the number of hours studied outside of timetabled course time across all students correlated with

students' PAI score. The correlation was not significant ( $r=.154$ ,  $n=158$ ,  $p=.053$ ). This is shown graphically in figure 9 below.



**Figure 9. Scatterplot of hours studied outside of timetabled course time correlated with PAI scores**

#### **4.2.3. Reverse coding and internal consistency**

As discussed in section 3 there was one Likert scale question (question 18) in the questionnaire in which a participant responding with agree or strongly agree would be indicating a lower perception of academic integration than a student responding with disagree or strongly disagree, a situation that was anomalous compared to all of the other scale items. As such, when it came to processing the data from the questionnaire, the Likert scale for question 18 was reversed to ensure that it matched the other questions that contribute toward the PAI scale. However, it must be noted that out of the 10 items that made up the PAI scale, the only question that could be removed to improve the Cronbach's Alpha coefficient would have been question 18 following its reverse coding. If this question was removed, the Cronbach's Alpha coefficient would have increased from .716 to .736. This indicated a reasonable likelihood that some participants had simply followed the pattern of the Likert scale responses down the page, rather than fully engaging with the questions. Incidentally, the Cronbach's alpha with question 18 included but without reversing the scale returned a result of .638. Please refer to table 6 below for a summary of the Cronbach's Alpha scores for the described situations.

**Table 6. PAI scale and Cronbach's Alpha coefficient scores**

<b>Scale</b>	<b>Cronbach's Alpha</b>
PAI scale group of 10 Likert questions, with question 18 included and coding reversed	.716
PAI scale group of 9 Likert questions with question 18 removed	.736
PAI scale group of 10 Likert questions with question 18 included and coding not reversed	.638

### **4.3. Results by hypotheses in order**

The first and the last alternative hypotheses were supported by the data, but the remaining four were not supported.

#### **4.3.1. Hypothesis 1**

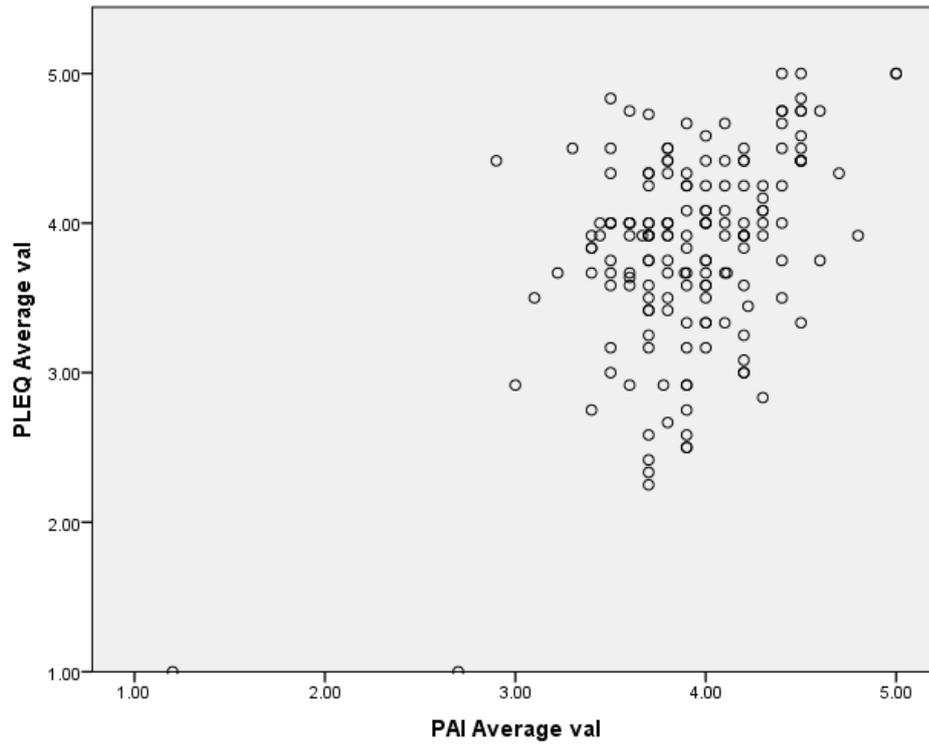
H<sub>10</sub>: No relationship exists between students' mean PLEQ scores and PAI scores.

H<sub>11</sub>: *A positive relationship will exist between students' mean PLEQ scores and PAI scores.*

Test undertaken: A Pearson product moment correlation coefficient was undertaken to determine if PLEQ scores correlated with PAI scores.

Result: There was a strong positive correlation between mean PLEQ scores and PAI scores ( $r=.479$ ,  $n=164$ ,  $p < .001$ ). This is shown graphically in figure 10 below.

- The null hypothesis is not supported, the alternative hypothesis of a relationship existing between students' PLEQ scores and PAI scores is supported.



**Figure 10. Scatterplot of PLEQ to PAI correlation**

#### 4.3.2. Hypothesis 2

H<sub>20</sub>: there will be no significant difference in the mean PLEQ scores of international students compared to domestic students.

H<sub>21</sub>: *International students will have lower mean PLEQ scores than domestic students.*

Test undertaken: An independent samples t-test was conducted to compare international student and domestic student mean PLEQ scores.

Result: There was no significant difference in the scores between the two groups-  $t(158)=-0.751$ ,  $p=.454$  (international students  $M = 3.810$ ,  $SD = 0.606$ ; domestic students  $M= 3.909$ ,  $SD = 0.903$ - please refer to Table 7 below).

- The null hypothesis is supported, the alternative hypothesis of a difference existing is not supported.

**Table 7. PLEQ scores of international students and domestic students**

	International or Domestic student	N	Mean	Std. Deviation
PLEQ scores	International student	126	3.8106	.60677
Average val	Domestic student	34	3.9093	.90322

### 4.3.3. Hypothesis 3

H3<sub>0</sub>: there will be no significant difference in the mean PAI scores of International students compared to domestic students.

*H3<sub>1</sub>: International students will have lower mean PAI scores than domestic students.*

Test undertaken: An independent samples t-test was conducted to compare International student and domestic student mean PAI scores.

Result: There was no significant difference in the scores between the two groups-  $t(158)=0.107$ ,  $p=.915$  (international students  $M = 3.919$ ,  $SD = 0.373$ ; domestic students  $M= 3.910$ ,  $SD = 0.646$ - please refer to Table 8 below).

- The null hypothesis is supported, the alternative hypothesis of a difference existing is not supported.

**Table 8. PAI scores of International students and domestic students**

	International or Domestic student	N	Mean	Std. Deviation
PAI scores	International student	126	3.9193	.37286
Average value	Domestic student	34	3.9101	.64583

### 4.3.4. Hypothesis 4

H4<sub>0</sub>: there will be no significant difference in the level of academic skills international students arrived at their institution of study with compared to domestic students.

*H4<sub>1</sub>: international students will have arrived at their institution of study with less of the academic skills required to be successful compared to domestic students.*

Test undertaken: An independent samples t-test was conducted to compare International and domestic students who arrived at their institution of study with the academic skills required to be successful.

Result: There was no significant difference in the scores between the two groups-  $t(159)=0.236$ ,  $p=.814$  (international students  $M = 3.71$ ,  $SD = 0.739$ ; domestic students  $M= 3.68$ ,  $SD = 0.912$ - please refer to table 9 below).

- The null hypothesis is supported, the alternative hypothesis of a difference existing is not supported.

**Table 9. Academic skills of international and domestic students**

	International or Domestic student	N	Mean	Std. Deviation
I had the academic skills required to be successful in my courses before I arrived at EIT	International student	125	3.71	.739
	Domestic student	34	3.68	.912

#### 4.3.5. Hypothesis 5

H5<sub>0</sub>: there will be no significant difference in the mean PLEQ scores for international students who have studied for more than one semester compared to those students who are still in their first semester of study.

H5<sub>1</sub>: *The mean PLEQ scores for international students who have studied for more than one semester will be higher than for those students who are still in their first semester of study.*

Test undertaken: An independent samples t-test was conducted to compare the mean PLEQ scores of International students who were in their first semester of study to the mean PLEQ scores of international students who had studied for two semesters or longer.

Result: There was no significant difference in the scores between the two groups-  $t(128)=-0.602$ ,  $p=.548$  (international students who had studied for one semester only  $M = 3.858$ ,  $SD = 0.676$ ; international students who had studied for two semesters or longer  $M= 3.789$ ,  $SD = 0.572$ - please refer to table 10 below).

- The null hypothesis is supported, and the hypothesis of a difference existing is not supported.

**Table 10. International students PLEQ scores one versus two or more semesters**

	International students' length of study	N	Mean	Std. Deviation
PLEQ scores	One semester	44	3.8580	.67571
Average value	Two or more semesters	82	3.7893	.57187

#### 4.3.6. Hypothesis 6

H6<sub>0</sub>: There will be no significant difference in the mean PAI scores for international students who have studied for more than one semester compared to those students who are still in their first semester of study.

H6<sub>1</sub>: *The mean PAI scores for international students who have studied for more than one semester will be higher than for those students who are still in their first semester of study.*

Test undertaken: An independent samples t-test was conducted to compare the mean PAI scores of International students who were in their first semester of study to the mean PAI scores of international students who had studied for two semesters or longer.

**Result:** There was a significant difference in the scores between the two groups-  $t(128)=-2.117$ ,  $p=.036$  (international students who had studied for one semester only  $M = 3.824$ ,  $SD = 0.412$ ; international students who had studied for two semesters or longer  $M= 3.969$ ,  $SD = 0.343$  - please refer to table 11 below).

- The null hypothesis is not supported, the alternative hypothesis of a difference existing is supported.

**Table 11. International students' PAI scores one versus two or more semesters**

	International students' length of study	N	Mean	Std. Deviation
PAI scores	One semester	44	3.8237	.41151
Average value	Two or more semesters	82	3.9694	.34287

#### Domestic students

Given the significant result for international students, it was decided to conduct the same test for domestic students to determine if they also followed the same pattern. An independent samples t-test was conducted to compare the mean PAI scores of domestic students who were in their first semester of study to the mean PAI scores of domestic students who had studied for two semesters or longer. There was no significant difference in the scores between the two groups-  $t(34)=.269$ ,  $p=.790$  (domestic students who had studied for one semester only  $M = 3.958$ ,  $SD = 0.570$ ; domestic students who had studied for two semesters or longer  $M= 3.896$ ,  $SD = 0.690$ ).

#### **4.4. Further data exploration**

This subsection outlines additional exploration of the data to determine if there were significant differences between population subgroups and also presents the results of the student comments fed back on the questionnaire. The following analyses were undertaken- determine if:

- a) different subpopulations have higher PLEQ scores than others
- b) different subpopulations have higher PAI scores than others
- c) Any particular themes emerged from question 27 ('Please write below any other comments you wish to express regarding your learning experience at (the institution)').

##### **4.4.1. Subpopulations and PLEQ scores**

The mean PLEQ score for respondents was 3.833 (SD 0.674). To determine whether any factor variables may incorporate some subpopulations that were significantly different from the mean, the following tests were undertaken:

- for the PAI scores factor variables that had more than two categories (nationality, type of programme, subject area, campus and ‘number of semesters studied’), one way analysis of variance (ANOVA) was undertaken.
- for the PAI scores factor variable that had two categories only (full-time/part-time), an independent samples t-test was undertaken. (The results for the factor variable ‘domestic/international’ were dealt with under hypothesis 3 and are not discussed here.)

The ANOVA confirmed that the difference in PLEQ scores was not significant at the  $p < .05$  level for the following factor variables:

- ‘Nationality’ ( $F(5, 153) = 0.541, p = .745$ )
- ‘Type of programme’ ( $F(3, 156) = 2.547, p = .058$ )
- ‘students’ subject areas’ ( $F(3, 157) = 1.291, p = .28$ )
- Campus ( $F(2, 158) = 0.926, p = .398$ )
- ‘number of semesters studied’ ( $F(4, 155) = 0.706, p = .589$ ).

The independent samples t-test confirmed that the difference in PLEQ scores was not significant for the factor variable ‘full-time/part-time’:  $t(159) = -.737, p = .462$  (full-time students  $M = 3.801, SD = 0.602$ ; part-time students  $M = 3.902, SD = 0.875$  - please refer to table 12 below).

**Table 12. PLEQ scores full-time versus part-time students**

	Full-time or Part-time	N	Mean	Std. Deviation
PLEQ Average value	Full-time student	122	3.8099	.60220
	Part-time student	39	3.9017	.87482

#### 4.4.2. Subpopulations and PAI scores

The mean PAI score for respondents was 3.917 (SD .438). To determine whether any factor variables may incorporate some subpopulations that were significantly different from the mean, the same tests were undertaken as for the PLEQ scores above.

The ANOVA confirmed that the difference in PAI scores was not significant at the  $p < .05$  level for the following factor variables:

- ‘Type of programme’ ( $F(3, 156) = 1.193, p = .314$ );
- ‘students’ subject areas’ ( $F(3, 157) = 2.2, p = .085$ );
- Campus ( $F(2, 158) = 2.831, p = .062$ ); and
- ‘number of semesters studied’ ( $F(4, 155) = 1.3, p = .268$ ).

The ANOVA confirmed that the difference in PAI scores across different nationalities was significant at the  $p < .05$  level ( $F(5, 153) = 2.7, p = .023$ ). This indicates the effect size as being of medium significance, with the effect size calculated using eta squared being .08. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Chinese students ( $M = 3.59, SD = 0.37$ ) was significantly different from both Indian students ( $M = 3.95, SD = 0.47$ ) and New Zealand students ( $M = 3.98, SD = 0.44$ ). (Please see appendix 9.3.1 for detail of the tests undertaken).

The independent samples t-test confirmed that the difference in PAI SCORES was not significant for the factor variable 'full-time/part-time':  $t(159) = -.133, p = .894$  (full-time students  $M = 3.913, SD = 0.378$ ; part-time students  $M = 3.924, SD = 0.605$  - please refer to table 13 below).

**Table 13. PAI scores full-time versus part-time students**

	Full-time or Part-time	N	Mean	Std. Deviation
PAI scores	Full-time student	122	3.9134	.37772
Average value	Part-time student	39	3.9242	.60534

#### **4.4.3. Any other comments.**

This subsection investigates responses to questionnaire question 27: *Please write below any other comments you wish to express regarding your learning experience at EIT.* It was noted while inputting that comments from the online responses were substantially longer than those from the paper-based responses-this may have been due to the lack of a time or space limit for completing the questionnaire for the online participants, whereas the paper-based questionnaire participants had a prescribed time and a guide of a few lines for the feedback question.

A content analysis of the responses to question 27 categorised responses into six overarching themes as represented in table 14 below. General comments that expressed overall satisfaction with students' learning experience were the most common (21), followed by those that expressed students were not happy with their learning experience (14). Eleven students had general suggestions for EIT, while another 11 stated that clearer assessment expectations were needed and seven that more employment focused support/ experience was needed as part of the curriculum.

Comments were fairly well split across international and domestic students by their representativeness in the sample population, apart from participants making general suggestions for EIT, and those stating that more employment focused support/experience was needed-every

participant who expressed these comments were international students with every student that expressed the need for more employment focused support/experience were Indian. Table 14 below presents the cross-tabulation of the themed comments and the international or domestic status of students, while table 15 below that provides some indicative examples of actual comments.

**Table 14. Other comments regarding learning experience by international/domestic status**

<b>Any other comments regarding my learning experience</b>	<b>International student</b>	<b>Domestic student</b>	<b>Total</b>
Happy with Learning Experience	12	9	21
Not happy with Learning Experience	8	6	14
Suggestion	11	0	11
Clearer assessment expectations needed	7	4	11
Other	8	1	9
More employment focussed support/ experience needed	7	0	7
<b>Total</b>	<b>53</b>	<b>20</b>	<b>73</b>

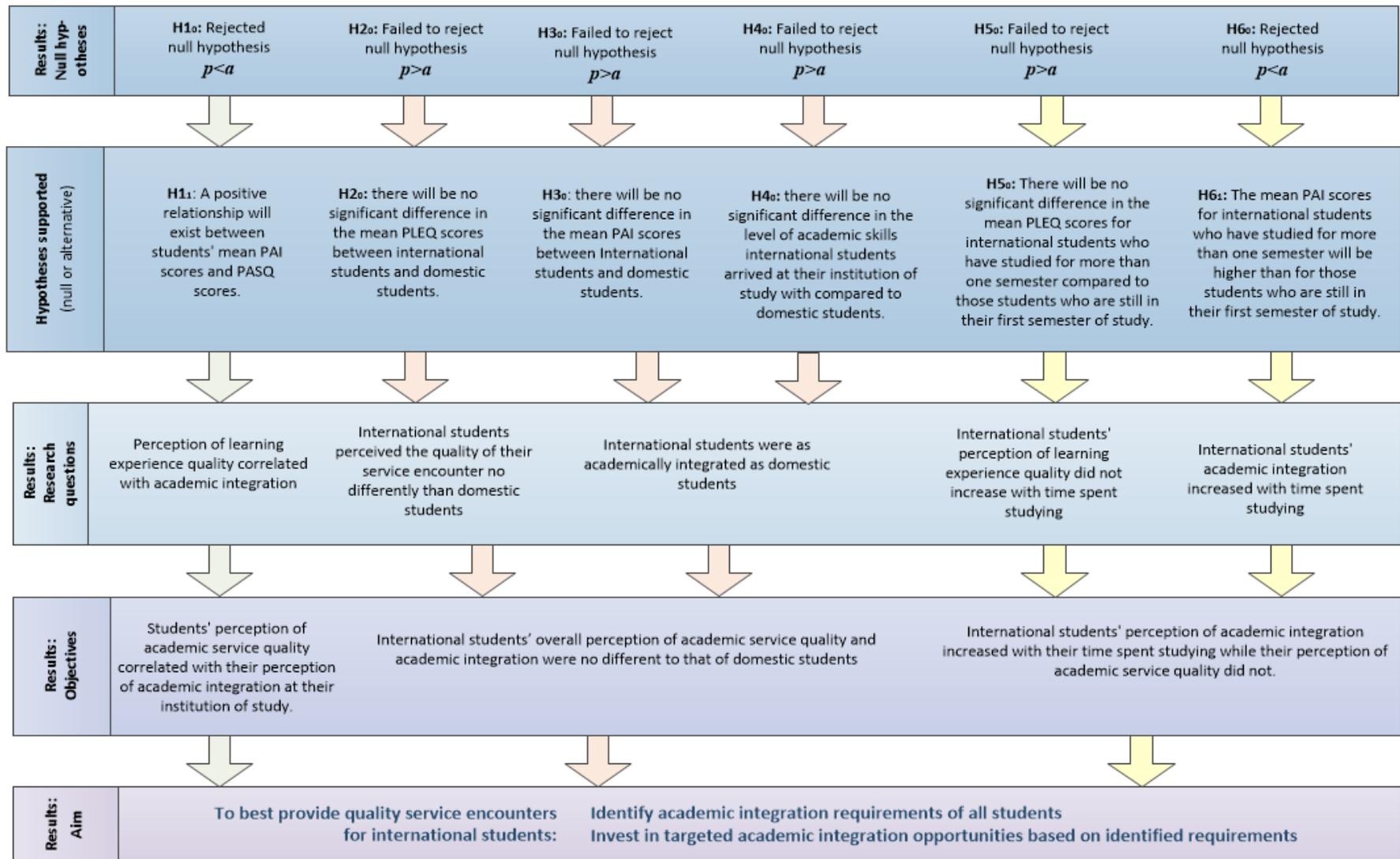
**Table 15. Examples of other comments regarding learning experience**

Happy with Learning Experience	<p>'I am enjoying my learning experience.'</p> <p>'I am truly thankful for learning new ways.'</p>
Not happy with Learning Experience	<p>'I found feedback seem always on the things I done wrong which lowered my confidence in completing the course. Any positive feedback would have been welcoming, but I ended up getting this mostly from work colleagues and other students and without them I would not have finished my course.'</p> <p>'Level of engaging students has to improve.'</p>
Suggestion	<p>'Start an English community group for international students at EIT.'</p> <p>'Auckland campus needs a library.'</p>
Clearer assessment expectations needed	<p>'Some courses are poor, some are good. Problem when assessment criteria are not clear. Problem when lecturer expectation is different from course outline.'</p> <p>'Bad that assessments are unclear with every lecturer following a different procedure.'</p>
Other	<p>'Is self-evaluation report really important?'</p> <p>'Difficult to cope with level of study.'</p>
More employment focussed support/ experience needed	<p>'Need to include industry visits.'</p> <p>'Need a full semester industry experience. An orientation to NZ work.'</p>

## **5. DISCUSSION**

### **5.1. Introduction**

In this section, the relationship of the results to the specific objectives of the research will be discussed, while in the final conclusion section (section 6), the relationship of the results to the more general aim of the research will be discussed. As identified in the results section (section 4), the questionnaire data provided mixed results in terms of the hypotheses. It was expected prior to data processing that there would be support for the majority of the hypotheses as they were informed by the literature review. Possible reasons that the hypotheses were not supported by the data will be discussed below, as well as the theoretical and managerial implications of the results. Figure 11 below provides an overview of the results by the hypotheses, the research questions, objectives and aim.



Source: Author.

Figure 11. Overview of results by hypotheses, research questions, objectives and aim

## 5.2. Internal consistency

The success of the data gathering phase for this research project was based on the validity of the PLEQ and PAI scales. As reported at the beginning of the results section, the Cronbach's Alpha Based on Standardized Items for both scales confirmed that the scales are internally consistent and reliable for hypothesis testing. A further singular measure of each latent variable was also included in the questionnaire to triangulate the validity of the scales. For both scales the triangulation question was correlated to the scale using a Pearson product moment correlation coefficient to determine if the relationship between the scale and the triangulation question was significant. For the PLEQ scale the correlation did indeed prove significant, but for the PAI scale it was not significant.

Given the results of the tests for internal consistency, there is confidence that the results of the hypotheses testing reported above are valid, at least insofar as the scales are used within those hypotheses. The PLEQ scale has the added validity of correlating with the triangulation question whereas the PAI scale does not.

## 5.3. Objective 1.

**Contribute to the ongoing exploration of whether students' perception of learning experience quality correlates with their perception of academic integration with their institution of study.**

Hypothesis 1 addressed this debate specifically by contending that a positive relationship exists between students' mean PLEQ scores and PAI scores. Results confirmed that the two scores were strongly positively correlated for students at the institution under study thus indicating support for hypothesis 1.

It is important to note that the direction of the relationship between the two scales - PLEQ and PAI - has not been substantiated by the research data - only the correlation. It is quite conceivable that causality works both ways: students who perceive they have the academic skills to succeed in their study will also perceive their institution is providing a high level of learning experience quality, and students who perceive they are receiving a high level of service quality will likely perceive their academic integration into the institution more favourably. For example the institution may be providing additional tutoring in academic skills which improves the students' perception of academic integration and also quality of learning experience.

Even without an understanding of the exact nature of the correlation, the result indicates that initiatives to enhance the potential of students to integrate themselves into the academic milieu of

the institution will go hand in hand with the students' positive perception of service quality of the institution. This should further encourage management to allocate resources to classes and initiatives that aim to provision international students (and others) with the specific academic skills they require to successfully complete their studies.

To tease apart the exact nature of this correlation, a future study might measure the perception of academic integration and service quality at the beginning of a student's study period, then randomly assign half of the students to extra mentoring in academic skills, while allowing the other half of the students to undertake their study without the extra mentoring. The measurements of perception of service quality and academic integration could then be repeated at the end of the students' study period. The results from the two cohorts could then be compared to determine if the differences between them was significant. Over time it is likely that such studies will be progressively undertaken, as the link between academic integration and service quality is an important one for institutions competing for international students in a competitive market.

#### **5.4. Objective 2.**

**Contribute to the ongoing exploration of whether international students' perception of learning experience quality and academic integration are different than that of domestic students.**

The research results showed no support for the contention that perceptions of service quality and academic integration are different for international students and domestic students. Hypotheses 2, 3 and 4 addressed this issue specifically by contending that international students will have lower PLEQ scores ( $H_{2_1}$ ) and PAI scores ( $H_{3_1}$ ) than domestic students, and that international students will have arrived at the institution of study with less of the academic skills required to be successful than domestic students ( $H_{4_1}$ ). However, none of these hypotheses were supported by the data. There was no significant difference between international and domestic students' PLEQ scores, or PAI scores, and international students did not arrive at their institution of study with less of the academic skills required to be successful compared to domestic students.

The three postulated hypotheses were based on the literature reporting the difficulties of acculturation for international students fitting into a different culture and educational setting with different academic expectations, so there was a reasonable expectation that they would be supported by the data. However, taking these results at face value, it appears that international students do not need to be treated differently to domestic students. That international students' perception of learning experience quality is equal to domestic students is a good indication that all

students are treated relatively equally and that the learning experience is tailored as much for the international students as it is for the domestic students.

That international students who have come from a foreign academic milieu perceived they were no less academically integrated than domestic students is surprising. The domestic students emerged from a secondary education system that has as one of its purposes to prepare students for New Zealand's tertiary education system, so the result raises questions about the quality of the New Zealand secondary education system in preparing students for tertiary study. New Zealand's tertiary institutions have long been decrying the dumbing down of New Zealand's secondary education meaning that domestic students entering degree programmes lack skills necessary for their success (Redmond, 2017). This assertion has recently been supported by the Programme for International Students Assessment (Pisa) results which have seen New Zealand secondary students decline in reading and maths rankings compared to international peers every year from 2010-2015 (Collins, 2017). However another factor is at play here as New Zealand's current funding model for tertiary institutions forces the institutions to admit applicants who may not have the academic skills to be successful to remain solvent: "... austerity in the sector meant staff felt pressured to admit students without the prerequisites or skills needed for degree-level study" (the Tertiary Education Union, in Redmond, 2017). Alternatively, to view this same result positively, it could indicate that either supplementary instruction upon arrival, or preparation in foreign countries beforehand, is preparing international students well for what is to them a foreign academic environment. Either way, the implication for management is that any resource allocation for supplementary academic integration instruction, or embedding the teaching of academic skills within existing courses, needs to target domestic students as well as international.

### **5.5. The value of unsupported hypotheses**

In regard to the theoretical implications of the data not supporting H2<sub>1</sub>, H3<sub>1</sub> and H4<sub>1</sub>, as described above, this is not necessarily a negative outcome; rather, it can be viewed as being just as important as data supporting the hypotheses- as Karl Popper observed: 'If we know where the truth is not, we do know some truth' (Philosophy Overdose, 2017, 9:20). The results indicate that there is no significant difference between domestic and international students in relation to perception of learning experience quality or academic integration and therefore the international students do not have unique needs in relation to domestic students. This is a significant finding in itself, as it runs counter to the bulk of published literature on the subject, and it equally deserves publishing and publicising, as if the results supported the hypothesised difference between international and domestic students: "...there are plenty of scientific results that are left out of

publications because they are not statistically significant, but nevertheless provide information” (Taleb, 2005, p. 170).

It would make for a perverse scientific/academic world if only research that found support for hypotheses was reported, whilst research that found no support for hypotheses was never reported. This has been shown to be a major problem in the pharmaceutical industry (Goldacre, 2012) and may well be equally problematic in other disciplines.

Given that Popper’s theory of falsification asserts that if one single observation does not fit with the thesis, the thesis can be considered falsified and must therefore be either revised or rejected (Parvin & Meadowcroft, 2010), it could be argued that the hypotheses generated from the literature that were not supported must be revised based on the data. Such revision may, for example, include making the hypotheses nation-specific, rather than applicable to all international students, or subject to certain time-scales, e.g. ‘Chinese students will have a lower perception of learning experience quality than Indian students’ or ‘international and domestic students’ perception of academic integration will diverge over a three-year period’.

### **5.6. Objective 3.**

**Contribute to the ongoing exploration of whether international students’ perception of learning experience quality and academic integration increase with their time spent studying.**

Hypotheses 5 and 6 addressed this objective specifically by contending that PLEQ scores ( $H5_1$ ), and PAI scores ( $H6_1$ ) will be higher compared to international students’ who have studied for more than one semester than for those who are still in the first semester of study. As it turned out, the questionnaire data supported  $H6_1$ , but showed no support for  $H5_1$ . This means that international students’ perception of academic integration increased with their time spent studying while their perception of learning experience quality did not.

Regarding  $H6_1$ , to determine if the increase in mean PAI scores over time applied to domestic students as well as international students, an independent samples t-test was conducted to compare the mean PAI scores of domestic students who were in their first semester of study to the mean PAI scores of domestic students who had studied for two semesters or longer (see appendix 9.3.2 for detail of results). There was no significant difference in the scores between these two groups.

Interpreting these results meaningfully is difficult, especially considering that the results from Objective 2 indicated that international students overall perception of service quality and academic

integration are no different to that of domestic students and the result from Objective 1 indicated that students' perception of learning experience quality correlated with their perception of academic integration. A summary of these combined results indicates that: international students perceived they received a similar level of learning experience quality and had a similar level of academic skills to those of domestic students, however over time the international students perceived they became more academically integrated, whilst the domestic students did not.

One possible rationale for this result is that the institution's initiatives to improve the academic integration of international students specifically upon commencement of study are successful, so the international students become more academically integrated at the beginning of their study but the domestic students do not. An alternative interpretation may be that international students who do not academically integrate do not continue in their studies with the institution, while the domestic students do. This would mean that only the academically integrated international students remain and that it is incumbent upon management to ensure the percentage of these students vis-à-vis the total number of international students who begun their studies with the institution is maximised.

## **5.7. Further pattern exploration**

In addition to the hypotheses that this study investigated, further analysis of the PLEQ and PAI data and textual comments made by the students provided some interesting results (see section 4). The results from this analysis are discussed below.

### **5.7.1. PLEQ results**

The overall mean PLEQ score for the total population was 3.83 indicating that in general students had a favourable perception of their learning experience quality. This was corroborated by the general learning experience quality question result in which two thirds of students rated the quality of their overall learning experience as 'good' or 'very good'. These positive results reflect those of the International Graduate Insight Group insofar as they found that in general, in New Zealand, international students perceive their learning experience favourably (Generosa, et al., 2013).

ANOVA and independent samples t-tests were conducted to determine if there were any student background characteristics that were associated with significant differences in PLEQ scores between groups. Data indicated that there were no significant differences between groups. This result can be interpreted favourably, insofar as the quality of the learning experienced by students

is generally consistent across cultures, campuses, programmes and level of study, possibly indicating that all students are being treated equally, and there is no need for management to target specific subpopulations for specific interventions to improve their perception of learning experience quality.

### **5.7.2. PAI results**

The overall mean PAI score for the respondents was 3.92 indicating that in general students believed that they were coping well with the academic demands of their study. ANOVA and independent samples t-tests were conducted to determine if there were any student background characteristics that were associated with significant differences in PAI scores between groups. Data indicated that there were no significant differences between groups, except for students' nationality. In terms of nationality, the ANOVA confirmed that the mean PAI score for Chinese students was significantly lower than that of Indian students and New Zealand students (please see appendix 9.3.1 for results).

This result adds useful detail regarding the non-support for result of hypothesis H3<sub>1</sub> (international students will have lower mean PAI scores than domestic students). Indeed, it indicates that the similarities between domestic and international students mask differences at a more granular level of the population. Theoretically, this alludes to a more nuanced conception of student preparedness for tertiary education than the one used for this research, one based on national groupings, or even drilling down within national groupings to consider the specific pathways through which students have encountered tertiary education. Managerially, knowing that the Chinese students have a significantly lower perception of academic integration than the other two main nationalities studying at graduate and postgraduate level indicates that there is a case to implement policies to ensure students coming specifically from China are further academically prepared for study. Such policies may include more rigorous application of academic entry criteria for Chinese students (thus externalising the cost of academic preparation), or providing targeted academic tuition upon arrival (thus internalising the cost of academic preparation).

### **5.8. General comment results**

Almost half of all students (44%) chose to offer a general comment on their learning experience and by theming these comments general patterns emerged that allowed comparisons across groups to be undertaken (please see table 15 above). There were some comments that were not related to students' learning experience that were expressed-mainly in relation to provision of facilities such as common rooms, food and drink, but by far the majority of comments were related to students' learning experience, and although this was requested in the question, it does add

further support to the thesis that it is the actual learning experience of the students that is the most important aspect of students' study. Furthermore, as the single most common theme from the comments was students expressing satisfaction with their learning experience, the general comment data can be seen to further corroborate the other indicators of student satisfaction with their learning experience.

Of particular note from the comments, is that international students were the most vocal in suggesting initiatives to make the institution under study a better place, even though there was no significant difference in perception of learning experience quality between international and domestic students. The two main initiatives suggested by students to improve the institution under study related to providing more employment focused support/experience and the need for clearer assessment expectations.

The request for more employment focused support/experience was made by international students only, and further analysis uncovered that all of these international students were Indian students. This result plays into the widely held view in the New Zealand media that the main intention of international students, particularly Indians, studying in New Zealand is to work in New Zealand (Enoka, 2016). This may be because Indian students have invested relatively more resources into their study than domestic students, as well as having come from societies in which lucrative employment is more difficult to obtain, so their focus is on gaining employment to recompense them and any creditors they may have as soon as possible.

The request for clearer assessment expectations was made by a higher percentage of domestic students (20%) than international students (13%). This indicates that the need for clearer assessment expectations are not a result of international students' struggling with English language, nor other cultural barriers, but an indication that some students from across the board are struggling to understand what tutors, and especially, different tutors in courses taught by more than one tutor, are expecting from the students for assessments. This has important managerial implications and deserves some attention from management, as it is assessment that ultimately determines how many and which students graduate.

Another category of comments that were solely expressed by international students were general suggestions to improve the institution under study. These were a mixture of suggestions that did not relate to the learning experience, such as provision by the institution under study of food and drink and common rooms, and further suggestions that did relate to the learning, such as suggestions for different types of assessments. The onus is on management to take note of these

suggestions as institutions seek to provide even better service quality for international students in a competitive environment, albeit, balanced against the resource implications of meeting student requests.

### **5.9. Data gathering**

As identified in the literature review and discussion of the formulation of the questionnaire used in this research, two of the standard questionnaires used in tertiary education service quality research around the world-HEdPERF and NSSE-were considered too unwieldy for this piece of research. Undoubtedly the measurements of all eight dimensions of tertiary education service quality by HEdPERF and the equally compelling breadth of NSSE can provide insight into particular functions of an organisation and can be useful in some contexts. However, in terms of usability for small-scale research projects such as this one, this research has shown that a more targeted group of questions on students' learning experience can provide an easily understood and quick to complete questionnaire that still has high internal consistency. This has important implications for the small-scale research activities being undertaken continuously into learning experience quality in tertiary institutions around the world. Using targeted small-scale functional questionnaires, not only saves researchers and students precious time, but could actually also assist with the reliability and validity of the questionnaires as students may be more engaged with a questionnaire that is not so complex and time-consuming. Ideally, over time, research into the reliability and validity of this and other like questionnaires would be undertaken to provide further evidence to support or oppose their fitness for purpose.

### **5.10. Limitations of the study**

A study such as this undertaken by a novice researcher grappling with new techniques throws up many opportunities for flaws. Limitations of the study abound and could be a factor contributing to the lack of corroboration of most of the research hypotheses. These limitations include:

Poor choice of hypotheses. The research questions were generated deductively from an extended reading of the literature, so they rest on reliable foundations. However, the hypotheses could have been framed more specifically to draw out crucial detail that was masked by their generality. For example, hypothesis H3<sub>1</sub> (international students will have lower mean PAI scores than domestic students): although there was no significant difference in mean PAI scores between domestic and international students, an ANOVA confirmed that Chinese students have a significantly lower perception of academic integration than the other two main nationalities (Indians and New

Zealanders) studying at graduate and postgraduate level. So, maybe an initial reframing of the hypothesis to research differences in mean PAI scores between nationalities would have been more appropriate, and the same criticism could be applied to the other hypotheses. Be that as it may, the further exploration of themes in relation to the PLEQ and PAI scales did identify the difference in nationalities in hypothesis H3<sub>1</sub>, which has important managerial implications.

#### Poor choice of scale

This study focused on the perception of students regarding learning experience quality and academic integration and measured these latent variables through the development of specific scales: PLEQ and PAI. The internal consistency of both scales were confirmed by statistical testing (as discussed in section 4), however, there is a distinct possibility that the students' perception of some of the items in the questionnaire did not equate with the reality of those items- especially for perception of academic integration.

The initial development of the research objectives and questions was done so on the assumption that a scale could be designed to measure academic integration as a manifest variable, however the difficulty in doing so as described in section 3, forced the development of a scale instead to measure the latent variable perception of academic integration (PAI) instead. The manifest variable of academic integration and the latent variable of perception of academic integration cannot be conflated-how well students were actually integrated into their studies may not have been reflected in their perceptions. Be that as it may, it was decided to proceed on the assumption that students' perception of their academic integration was likely still an indicator of their actual integration and in some ways just as important, considering the importance of students' perception to customer satisfaction.

Some of the PAI questions asked students to rate their perception of factors that could be objectively measured, for example, Question 18 "I often review my notes after class" and Question 15 "I complete all my assignments by the due date". It would not be easy to measure such factors, but maybe doing so and using these measurements to construct an academic integration scale would yield different results than the scale used for this study. Although the same argument could be made for measuring learning experience quality, the argument is not as strong given other studies have used customer's perceptions to create and measure a service quality scale (for example Zeithaml, Parasuraman & Berry, 1990 and Duque, 2014), and it could be argued that in the case of service quality and learning experience quality specifically, it is the customers' perception that is important no matter the reality of actual overtures by an institution and its staff to provide a high quality learning experience.

### Correlation versus causation

This study explored correlations and comparisons only, therefore causal connections were not able to be established. This was a deliberate approach given the difficulties involved with gaining enough evidence to establish causation in social research. Indeed, there is now widespread disillusionment with causation and acknowledgement that researchers can never demonstrate causality with certainty (Cooper & Schindler, 2008). Nevertheless without being able to demonstrate a causal connection between PAI and PLEQ (whereby greater PAI leads to greater PLEQ) intervention to improve PAI and therefore also PLEQ by, for example, offering supplemental academic induction classes, may be difficult for management to justify.

### Length of study

The respondents to the questionnaire had studied for a mean of 1.9 semesters (SD 0.999) so there was little differentiation in the amount of time students had been studying to reliably determine whether differences over time in PAI and PLEQ scores would materialise. The population chosen for the study were graduate and postgraduate students, and as such they were all studying for programmes that were between six months (graduate certificate) and two years long (some Masters degrees). Putting aside those students who may study more than one programme with the institution, this explains the relatively short mean length of study. And it is this relatively short mean length of study that could be a possible explanation for the lack of support for the hypothesised differentiation in PAI and PLEQ scores over time, i.e. there just wasn't enough temporal differentiation between those students who have studied for one semester and those students who had studied for longer.

### A non-representative sample population.

Testing hypotheses via a case study is a delicate exercise that increases the likelihood of both type I and type II errors because the case studied may be atypical (Flyvbjerg, 2006). This is just a function of the research journey, whereby some sample populations are not representative of the wider population in terms of particular traits, even though these traits may be prevalent in the population as a whole. The fact that this was a small case study and the sample size limited, especially in relation to domestic students exacerbates the likelihood that the population that was measured as part of the study are not representative of the wider student population at the institution under study, or the wider student population across New Zealand.

### 5.11. Future studies

Given unlimited resources, it is easy to imagine future study designs that would have a greater chance of corroborating the hypotheses, if indeed the assertions the hypotheses make do exist within the wider international student population in New Zealand. Such designs would cover a much larger population, and ideally the research method would incorporate 'real' data to measure students' academic integration, so that not just perceptions are measured, but also the actual integration. Measuring actual academic integration could entail testing students on such skills as: ability to critique, summarising, academic referencing, et cetera. The measuring of 'real' data could also include incorporating students' actual course results at the tertiary institution into the research. This would allow a comparison between the perception of academic integration, actual academic integration and its relationship with student success. Students could also be measured at specific stages of their academic journey, for example, as soon as their application to study at the tertiary institution was accepted, again within the first semester of their arriving, and then again just prior to graduation. In this way, the changes over an extended period of time could be explored.

Similar repeated measurement could be undertaken for learning experience quality, such that students' perception of learning experience quality could be measured as soon as the student was accepted by the tertiary institution, again near the end of the first semester, and again prior to graduation. Perception of learning experience quality would also be compared to the students' academic results to explore the relationship between these two variables. This would provide a much more systematic and comprehensive data set with which to measure changes in perception of learning experience quality over time.

Alternatively, an in-depth qualitative study may yield much richer data than was possible in this predominantly quantitative study. International students may differ from domestic students in many ways, such as expectations of the rewards to be gained from study, motivations for study, and degree of investment sunk into a study programme. All of these factors may have a large effect on the subtle affinity of the student for their study and it is these types of complex factors that could be explored to investigate, whether at a deeper level than was possible in the study presented here, there are differences in the perceptions of learning experience quality and academic integration between the two groups. Such a study would also be well-placed to investigate the appetite of students for a curriculum incorporating the big E engagement concept (Zepke, 2017).

Ideally both types of studies would be undertaken within New Zealand to provide a comprehensive overview of the role of academic integration in the perception of learning experience quality for international students. Such research would improve substantially the ability of tertiary institutions in New Zealand to be able to promote quality service encounters for the international student market.

## 6. CONCLUSION

### 6.1. What worked

The aim of the research described here was to contribute to the store of knowledge regarding how tertiary institutions can best provide quality service encounters for international students. This research has contributed to this store of knowledge in four significant ways.

Firstly, the corroboration of the correlation between students' perception of learning experience quality and their perception of academic integration has important managerial implications. There is evidence in the literature that perception of service quality is correlated with customer satisfaction, intention to return and intention to recommend the institution (e.g. Dlačić, et al. 2014). As perception of academic integration was correlated with perception of learning experience quality in this research, the implication is that improving perception of academic integration will also contribute to students' intention to return and intention to recommend the institution. Therefore investing resources into increasing students' perception of academic integration may pay off for management despite a lack of causal evidence that it will necessarily increase students' perception of learning experience quality.

Secondly, the lack of evidence supporting a difference in the perception of learning experience quality and academic integration between international and domestic students is an interesting result in the context of the literature review. By finding no support for a difference between international and domestic students, this study provides a contrast to other studies and opens up the possibility that either the presence of such differences has changed over time, or such differences apply for some institutions or nationalities only. Either way, in terms of conceptualising the quality of the learning encounter in tertiary education, it indicates that international students may not have unique learning experience quality needs and that they may not need to be treated differently from domestic students after all.

The third contribution relates to the PLEQ and PAI constructs. These scales achieved a high level of internal consistency confirming their validity to measure the two crucial concepts of perceived learning experience quality and academic integration. The successful use of these scales should give small-scale researchers confidence that well-designed, internally consistent questionnaires investigating quality learning encounters can yield useful results and offer a viable alternative to time-consuming and demanding, large-scale questionnaires.

The fourth contribution is the provision of a further case study focusing on the experience of international students in the New Zealand tertiary education context. There has been a paucity of published studies in the past, and any further information that can be circulated in the academic environment must be welcomed. Even if these results can only provide one snapshot of one particular cohort of students at one particular time in one specific tertiary institution, this snapshot, if arranged alongside other such snapshots will, over time present a collage that approximates the experience of international students in New Zealand.

The results of this research are intended to inform practice (in accordance with Midgley's (2000) action research imperative) and will hopefully go in some small way to improve quality service encounters for international students. Snippets of information gleaned from the data gathering here, such as the Indian students requesting greater work experience opportunities, and the lower perception of academic integration for Chinese students in particular are the specific 'take homes', of such studies, which can be instantly utilised by management to change practice and by researchers to inform their research.

Meanwhile, the results in terms of the larger themes of the research, such as the relationship between learning experience quality and academic integration, and temporal changes in perceptions of learning experience quality and academic integration may be picked up by other researchers to determine the efficacy of such constructs in relation to different contexts. Ideally, this research may contribute in some small way in a shift towards a greater emphasis on academic integration to improve the quality of service encounters for international students in particular and all students in general in the tertiary education environment.

## **6.2. What didn't work**

The lack of support for four of the six hypotheses generated from the literature for the purposes of this research project may be a function of this research being a case study which was designed to measure perceptions of students studying at a certain academic level in one specific tertiary institution. However, if uniqueness, or an atypical institution, is called into play to explain a lack of support for the majority of the hypotheses, it must also explain the actual support for two of the hypotheses- which it does not.

An alternative reading is that these results reflect the situation at the tertiary institution under study and this institution is part of an ever-changing international tertiary education environment. This environment requires continuous research to understand the constantly evolving nature of the relationships of international and domestic students with the teaching and learning

environment. The world moves on, while published studies remain intransigent; changes over time in the international student market have occurred, such as the shift of international students from lower level certificate programmes to more advanced graduate and postgraduate programmes and increasing internationalisation of curricula (Haigh, 2002). This could result in research into the themes explored in this study yielding different results over time which may then require constant recalibration of the hypotheses.

Optimistically speaking, this study could thus be a harbinger of evidence of greater academic proficiency of international students. Alternatively, it could be a further indication that the academic skills of domestic students graduating from secondary education in New Zealand are declining relative to international students (Collins, 2017). All researchers can do is to test, test and retest and build up an ever increasing bank of results that will over time suggest a thesis is likely or unlikely to reflect the real world. The theses can never be proven as such - no matter how many observations corroborate it:

“The fact that something has happened in the past, even 100 or a thousand or a million times, does not mean it will happen in the same way in the future: observations of a particular event under particular circumstances cannot *prove* inconclusively that it will always occur in the way we expect, or at all. We cannot predict the future by examining the past, however sure we are that we have observed the part correctly...” (Parvin & Meadowcroft, 2010, p. 37).

And that is as it should be in the constantly evolving international teaching and learning environment.

### **6.3. And as for Neoliberalism**

Finally, it is important to return to the start of this study and consider the wider system in which the research was undertaken. It was stated early on in this study that the neoliberal milieu which now permeates the tertiary education environment and which is coincidental with the quality management ethos has been taken as a given by this researcher. As such, the methodology adopted to undertake this piece of research has been firmly embedded within the mainstream view of engagement research as outlined by Nick Zepke (2017) and its results are applicable to mainstream management.

This researcher's approach and these results can be critiqued as being a further prop to support the neoliberal takeover of education, and a missed opportunity to assist in the emancipatory ideal of engaging students to develop a critical consciousness with which they can critique this neoliberal system (Zepke, 2017). This critique and the benefits and ideals of the big E engagement concept are acknowledged. In keeping with the customer orientated service quality theme of this study, ideally such a curriculum could be offered to international students, with the success of it predicated on whether international students voluntarily enrol, pay for it and prefer it to the current mainstream choices they have. Indeed, given recent technological advancements, the ability to create an alternative model of tertiary education outside the mainstream with which to provide students an emancipatory curricula has improved, and such alternative models have already been scoped (Hallam, 2017).

Until an opportunity for offering emancipatory education to those who want it can be provided, international students appear to value the mainstream offerings that are available in tertiary education in New Zealand as evidenced by the growth of international students studying in New Zealand (Education New Zealand, 2017). This study, providing further support on the back of the International Graduate Insight Group studies (2017a), indicates that New Zealand's type of mainstream education is 'what works' in terms of attracting international students and providing them a quality learning experience. Further embedding of service quality approaches and techniques can only contribute further to the mutual satisfaction of the customer and the tertiary institutions.

New Zealand tertiary institutions have been serving students for over 150 years (or has it been the other way round?) but it is only in the last couple of decades that international students have come into focus. Systems to support these non-traditional customers with non-traditional needs have to be retrofitted to the existing tertiary systems and cultures and the fit is not yet exact. The better that tertiary institutions can understand international students' needs, the better they can match programme delivery with those needs. The current political, financial and regulatory framework governing New Zealand tertiary education is not perfect, but the opening up of New Zealand's tertiary education system to international students has resulted in positive outcomes for a large number of international students that would otherwise never have had such opportunities. It has also enabled New Zealand's tertiary institutions to remain financially viable in the absence of adequate taxpayer-funded support. It is hoped also that New Zealand's tertiary institutions as well as domestic students have gained in other ways from this great mixing of cultures that welcoming international students has allowed and that we have all become more open to international perspectives in the ways we engage with the world.

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## 8. GLOSSARY

Throughout this report the following terms and acronyms are used:

- EIT / Eastern Institute of Technology: The tertiary institution at which the research was undertaken
- Domestic student: A student who has New Zealand resident or citizen status.
- Institution of study: The tertiary institution at which students are undertaking their studies.
- International student: A student who does not have New Zealand resident or citizen status. International students have generally entered New Zealand on a student visa from their home country, although may have other visa types, such as visitors' visas.
- NZQA / New Zealand Qualifications Authority: the government agency charged with assuring the quality of education delivered at Polytechnics, Wananga and Private Training Establishments.
- PAI: The Perception of Academic Integration scale designed for this study. Consists of respondents' average result of rating their perception of academic integration across a range of questions in the research questionnaire.
- PLEQ: The Perception of Learning Experience Quality scale designed for this study. Consists of respondents' average result of rating their perception of learning experience quality across a range of questions in the research questionnaire.
- Student: for the purposes of this study, specifically a student of a tertiary education institution (encompasses the terms learner, participant, trainee, etc.)
- TEC / Tertiary Education Commission: The government body responsible for funding for tertiary institutions in New Zealand.
- Tertiary education: any further education undertaken following secondary education. This incorporates education From Level 1 to Level 8 of the New Zealand National Qualifications Framework and includes vocational training. Tertiary education is used in preference to the term higher education which has connotations of non-vocational training.
- Tertiary institution: an organization that is involved in providing education or training to students who have finished secondary education (also known as a Tertiary Education Organisation).

## 9. APPENDICES

### 9.1. Final questionnaire

#### Questionnaire

#### Perceptions of Tertiary Education Service Quality

Your co-operation in completing the questionnaire below is greatly appreciated.

- The questions should take less than 15 minutes to complete.
- All responses are completely confidential.
- Completing the questionnaire is voluntary and you do not have to complete the questions if you object to doing so. Whether you do, or do not, complete the questions, it will have no effect on your studies at EIT. However, responses to the questions will be used to try to improve the quality of education at EIT.
- The information from this questionnaire will be viewed only by the researcher who will enter it into a confidential database within one month and then this questionnaire will be shredded.

**Definitions** that may help you:

Academic: related to education, especially higher education

Academic skills: Skills related to higher education, such as academic writing, referencing, research, academic integrity, critical thinking, presenting.

Academic staff: EIT tutors, programme coordinators and those who help with teaching practical and academic skills. It does not include staff who help with enrolment, visas, homestays and other forms of 'pastoral' care.

#### Section A

Please put a tick  in the box that matches how much you agree or disagree with each statement.

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	The programme I am studying at EIT is interesting and enjoyable					
2	The programme is well organised and my courses run smoothly					
3	At EIT students are treated equally and with respect					
4	My culture is valued and my cultural needs are					

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	provided for at EIT					
5	The facilities and resources that EIT offers support my learning experience					
6	I believe that my programme is teaching me what I need to know for employment in a modern workplace					
7	Academic staff communicate well with me and others in the class					
8	The contribution I can bring to my courses is valued by academic staff					
9	Academic staff seem well qualified and professional					
10	Academic staff provide regular and good quality feedback about my progress					
11	The assessment criteria for my courses are clear to me					
12	I think the standard of teaching is good					
13	I can easily understand the Academic staff when they speak					
14	I can easily understand the documentation and instructions in my courses					
15	I complete all my assignments by the due date					
16	I work hard to meet standards and expectations of academic staff					
17	I discuss my courses with others outside of class (students, family members, co-workers, etc.)					
18	I sometimes come to class without completing readings or assignments					
19	I often review my notes after class					
20	I ask questions in class and contribute to class discussions					
21	I sometimes work with classmates outside of class to prepare class assignments					

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
22	I have the academic skills required to be successful in my courses					
23	I had the academic skills required to be successful in my courses before I arrived at EIT					
24	Studying at EIT has helped me gain the academic skills required to be successful in my courses					

25. Approximately how many hours each week do you spend studying and working on your EIT coursework for all of your courses outside of your timetabled course time? \_\_\_\_\_ hours

26. Please put a tick in the box that matches your perception of the quality of EIT's overall learning experience.

		Very poor	Poor	Fair	Good	Very Good
26	The quality of the overall learning experience at EIT is					

27. Please write below any other comments you wish to express regarding your learning experience at EIT:

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**Section B.** Please tick the boxes that apply to you

**28.**

A. I have a study visa

B. I am a permanent resident or citizen of New Zealand

**29.** My nationality is:

A. Chinese

B. Indian

C. New Zealander

D. Other nationality, please list: \_\_\_\_\_

**30.**

I am a:

A. Full-time student

B. Part-time student

**31.** The type of programme I am enrolled in is:

A. Graduate Diploma

B. Post Graduate Diploma

C. Masters Degree

D. Other type of programme, please list:

\_\_\_\_\_

**32.** The subject area I am enrolled in is:

A. Health Science/ Nursing

C. Viticulture/ Oenology/ Wine Science

B. Business/ Applied Management

D. Information Technology/ Computing

E. Other subject, please list: \_\_\_\_\_

33. I attend:

A. Auckland Campus

B. Taradale Campus

34. Including this semester, I have been studying at EIT for \_\_\_\_\_ **semesters** (one semester= two terms, or approximately 6 months)

35. **Optional question:** If you would like to receive a summary of the research findings by email please write your email address below. This summary will be available at the end of 2017.

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Thank you for participating!

## 9.2. Questionnaire responses

Total valid responses = 165. Raw numbers are given unless specified otherwise.

Section A		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	The programme I am studying at EIT is interesting and enjoyable	2	7	24	104	27
2	The programme is well organised and my courses run smoothly	4	13	30	88	30
3	At EIT students are treated equally and with respect	3	13	22	72	54
4	My culture is valued and my cultural needs are provided for at EIT	4	5	54	69	33
5	The facilities and resources that EIT offers support my learning experience	6	15	25	80	39
6	I believe that my programme is teaching me what I need to know for employment in a modern workplace	5	15	37	85	23
7	Academic staff communicate well with me and others in the class	4	8	19	87	46
8	The contribution I can bring to my courses is valued by academic staff	2	3	32	106	20
9	Academic staff seem well qualified and professional	2	5	27	82	48
10	Academic staff provide regular and good quality feedback about my progress	8	11	36	84	25
11	The assessment criteria for my courses are clear to me	3	8	25	102	26
12	I think the standard of teaching is good	4	11	33	84	31
13	I can easily understand the Academic staff when they speak	2	7	26	78	50
14	I can easily understand the documentation and instructions in my courses	3	8	26	98	29
15	I complete all my assignments by the due date	2	1	10	69	80
16	I work hard to meet standards and expectations of	2	0	8	82	71

**Section A**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	academic staff					
17	I discuss my courses with others outside of class (students, family members, co-workers, etc.)	4	6	18	99	37
18	I sometimes come to class without completing readings or assignments	21	53	42	43	4
19	I often review my notes after class	2	16	51	80	14
20	I ask questions in class and contribute to class discussions	1	7	28	101	26
21	I sometimes work with classmates outside of class to prepare class assignments	5	15	23	78	40
22	I have the academic skills required to be successful in my courses	1	2	13	117	31
23	I had the academic skills required to be successful in my courses before I arrived at EIT	1	10	42	91	19
24	Studying at EIT has helped me gain the academic skills required to be successful in my courses	1	7	37	93	26

**25.** Approximately how many hours each week do you spend studying and working on your EIT coursework for all of your courses outside of your timetabled course time? \_\_\_\_\_ hours

Mean number of hours = 19.8 hours (standard deviation 10.175).

**26.** Please put a tick in the box that matches your perception of the quality of EIT's overall learning experience.

		Very poor	Poor	Fair	Good	Very Good
<b>26</b>	The quality of the overall learning experience at EIT is	2	9	43	80	28

**27.** Please write below any other comments you wish to express regarding your learning experience at EIT: 44% of students commented

**Section B.** Please tick the boxes that apply to you

**28.**



B. I am a permanent resident or

A. I have a study visa  citizen of New Zealand

29. My nationality is:

A. Chinese  B. Indian  C. New Zealander

D. Other nationality, please list: Filipino= 9; Sri Lankan = 5; Other = 14

30. I am a:

A. Full-time student  B. Part-time student

31. The type of programme I am enrolled in is:

A. Graduate Diploma  B. Post Graduate Diploma  C. Masters Degree

D. Other type of programme, please list: Post Graduate Certificate= 3

32. The subject area I am enrolled in is:

A. Health Science/ Nursing  B. Business/ Applied Management  
 C. Viticulture/ Oenology/ Wine Science  D. Information Technology/ Computing

E. Other subject, please list: N/A

33. I attend:

A. Auckland Campus  B. Taradale Campus

34. Including this semester, I have been studying at EIT for \_\_\_\_\_ semesters (one semester= two terms, or approximately 6 months) 1 semester= 56; 2 semesters = 84; 3 semesters = 7; 4 semesters = 4; more than 4 semesters= 9

35. **Optional question:** If you would like to receive a summary of the research findings by email please write your email address below. This summary will be available at the end of 2017.

68 respondents included email addresses

### 9.3. Supplementary statistical analysis

#### 9.3.1. ANOVA & Post Hoc test results from subsection 4.4.2

In section 4.4.2 results of an ANOVA were reported that: *confirmed that the difference in PAI scores across different nationalities was significant at the  $p < .05$  level ( $F(5, 153) = 2.7, p = .023$ ). This indicates the effect size as being of medium significance, with the effect size calculated using eta squared being .08. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Chinese students ( $M = 3.59, SD = 0.37$ ) was significantly different from both Indian students ( $M = 3.95, SD = 0.47$ ) and New Zealand students ( $M = 3.98, SD = 0.44$ ).*

The detail of the results for the ANOVA and Post Hoc tests is provided in the tables below- ANOVA (table 16), Test of Homogeneity of Variances (table 17), Multiple Comparisons (table 18) and Tukey HSD (table 19).

**Table 16. ANOVA of PAI average value**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.517	5	.503	2.696	.023
Within Groups	28.573	153	.187		
Total	31.090	158			

**Table 17. Test of Homogeneity of Variances of PAI Average value**

Levene Statistic	df1	df2	Sig.
.735	5	153	.598

**Table 18. Multiple Comparisons of PAI Average value**

(I) Nationality	(J) Nationality	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Chinese	Indian	-.35957*	.11224	.020	-.6835	-.0356
	New Zealander	-.38980*	.12967	.036	-.7641	-.0155
	Filipino	-.26605	.17642	.660	-.7752	.2431
	Sri Lankan	-.57049	.21846	.101	-1.2010	.0600
	Other Nationality	-.39224	.15400	.117	-.8367	.0522
Indian	Chinese	.35957*	.11224	.020	.0356	.6835
	New Zealander	-.03024	.09307	1.000	-.2989	.2384
	Filipino	.09352	.15157	.990	-.3439	.5310

(I) Nationality	(J) Nationality	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
	Sri Lankan	-.21093	.19893	.896	-.7851	.3632
	Other Nationality	-.03267	.12475	1.000	-.3927	.3274
New Zealander	Chinese	.38980*	.12967	.036	.0155	.7641
	Indian	.03024	.09307	1.000	-.2384	.2989
	Filipino	.12375	.16489	.975	-.3522	.5997
	Sri Lankan	-.18069	.20926	.955	-.7847	.4233
	Other Nationality	-.00244	.14064	1.000	-.4083	.4035
Filipino	Chinese	.26605	.17642	.660	-.2431	.7752
	Indian	-.09352	.15157	.990	-.5310	.3439
	New Zealander	-.12375	.16489	.975	-.5997	.3522
	Sri Lankan	-.30444	.24104	.805	-1.0001	.3912
	Other Nationality	-.12619	.18463	.984	-.6591	.4067
Sri Lankan	Chinese	.57049	.21846	.101	-.0600	1.2010
	Indian	.21093	.19893	.896	-.3632	.7851
	New Zealander	.18069	.20926	.955	-.4233	.7847
	Filipino	.30444	.24104	.805	-.3912	1.0001
	Other Nationality	.17825	.22514	.969	-.4716	.8281
Other Nationality	Chinese	.39224	.15400	.117	-.0522	.8367
	Indian	.03267	.12475	1.000	-.3274	.3927
	New Zealander	.00244	.14064	1.000	-.4035	.4083
	Filipino	.12619	.18463	.984	-.4067	.6591
	Sri Lankan	-.17825	.22514	.969	-.8281	.4716

\*. The mean difference is significant at the 0.05 level.

Table 19. PAI Average value, Tukey HSD

Nationality	N	Subset for alpha = 0.05	
		1	2
Chinese	18	3.5895	
Filipino	9	3.8556	3.8556
Indian	84	3.9491	3.9491
New Zealander	29	3.9793	3.9793
Other Nationality	14	3.9817	3.9817
Sri Lankan	5		4.1600
Sig.		.218	.499

Means for groups in homogeneous subsets are displayed.

- a. Uses Harmonic Mean Sample Size = 12.384.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

### 9.3.2. Domestic students PAI by length of study from subsection 5.6

Test undertaken: An independent samples t-test was conducted to compare the mean PAI scores of domestic students who were in their first semester of study to the mean PAI scores of domestic students who had studied for two semesters or longer.

Result: There was no significant difference in the scores between the two groups-  $t(34)=-0.269$ ,  $p=.826$  (domestic students who had studied for one semester only  $M = 3.958$ ,  $SD = .56962$ ; domestic students who had studied for two semesters or longer  $M= 3.8955$ ,  $SD = .68970$ - please refer to table 20 below).

**Table 20. Domestic students PAI scores one versus two or more semesters**

	Domestic students' length of study	N	Mean	Std. Deviation	Std. Error Mean
PAI Average value	One semester	12	3.9583	.56962	.16444
	Two or more semesters	22	3.8955	.68970	.14705